Volume 73 Nos 1 & 2
January/February 2005

Amateur Radio

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The magazine for **AUSTRALIAN** radio amateurs

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Jim Tregellas VK5JST

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The Q meter. See Jim Tregellas VK5JST's article on page 5

Contributions to Amateur Radio
Amateur Radio is a forum for WIA members' amateur radio experiments, experiences opinions and news. Manuscripts with drawings and or photos are always welcome and will be considered for publication. Articles on disc or email are especially welcome. The WIA cannot be responsible for loss or damage to any material. A pamphlet, How to write for Amateur Radio is available from the National Office on receipt of a stamped self-addressed envelope.

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The opinions expressed in this publication do not necessarily reflect the official view of the WIA and the WIA cannot be held responsible for incorrect information published.

Amateur Radio Service

A radiocommunication service for the purpose of self-training, intercommunication and technical investigation carried out by amateurs; that is, by duly authorised persons interested in radio technique solely with a personal aim and without pecuniary interest.

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Editorial comment

Colwyn Low VK5UE

From DX to emergency

2005 has started with a marvellous response across the world to the tsunami disaster in the Indian Ocean. An Indian DXpedition had at long last been able to operate from the Andaman Islands but instead found itself a major contact with the outside world when the waves struck. From DX to emergency communication without the DXpedition even starting. This is just one of many amateur operations set up across the region to provide emergency communications in response to the disaster. Links to reports on specific amateur operations are on the wia.org.au web site. We express our thanks to all amateurs who helped in this very necessary amateur operation and congratulate them on their selfless dedication to provide communications in a time of much need. Theirs is a great example of amateurs helping their fellows.

Over the Christmas - New Year break I have been considering several aspects of Amateur Radio magazine: -

1. For several months now we have not been able to provide a DX column and I have not had one comment about its non-appearance. Does this mean the Internet now carries all the news of DXpeditions, special event stations etc and AR magazine cannot provide the up to date information most operators require? Do we just need to publish a short list of future DXpeditions with their websites and short paragraphs on special event stations?
2. In a somewhat similar way our propagation charts generate no feed back. No one seems to want different circuits or comments on possibly the ones they use most and would like to have in hard copy in the magazine. Does this mean there is no further need, as the Internet now allows access to ionospheric data and DXers run their own prediction programs?

I would appreciate some comment on these topics. There is of course the matter of "What do we provide, in the only Australian amateur radio magazine available to the public and aspiring amateurs, to those who are interested in learning more and need pointers as to when to listen and on what frequencies and when they might find stations operating from exotic locations."

In this issue I have tried to provide a balance between technical articles, without which AR is not an amateur radio magazine, and news and comment. Several items I had hoped to publish have had to be held over until March AR and I apologise for that. Some of the material in this issue has to be published regularly to keep the participants updated and this issue got caught with DXCC, Grid Square and Operational Satellite data. We also had to publish the RD 2004 Contest results and the rules for the 2005 John Moyle Field Day in March. To help clear this backlog you have a 64 page issue, but March will be back to 56 pages.

I wish you all a Happy New Year and I hope we will not have to provide communications support to any major disaster this year. However please remember to keep the emergency equipment ready to operate at short notice just in case.

73 Colwyn VK5UE

February events

Central Coast Field Day
Wyong Racecourse,
Sunday 20 February

VK3GHA's HAMFEST Sale
Sunday 27th February, 2005
10am to 2pm
Healesville Memorial Hall
Maroondah Highway, Healesville

More details elsewhere this issue

Michael Owen VK3KI

A year in review

This is the first "WIA Comment" for 2005.

2005 is not only a new calendar year, but also a new financial year for the WIA.

So, let me look back over a year of great change, and see what has been achieved and what lessons can be learnt, with the new national WIA in place for just over half of that year.

For the new board I think that there have been three major issues in the first period of the restructured WIA.

The first has been the acceptance of the new structure by what used to be the Divisions, with Amateur Radio New South Wales the last to emerge just before Christmas as supporting the national WIA. Each of the former Divisions has recorded its support of the national body and its basic relationship with the national body in a formal agreement.

Now we have 3 former Divisions as separate organisations, offering services as a local club, or maintaining repeaters or providing other services for their members and the other 4 former Divisions have either wound up, or are in the process of winding up.

The second major issue to emerge was BPL. Experience overseas indicates that this is a threat to all users of the HF spectrum, not just amateurs. A small group has addressed the issue, ultimately proposing to the ACA an approach that turned out to be almost entirely consistent with the approach that the Authority has now announced that it is taking.

The other major issue has been the ACA's publication of the result of its review of the amateur service regulation, with the proposed changes to the structure of amateur licences, including the introduction of the Foundation Licence.

That publication occurred almost immediately after the WIA adopted its new Constitution, and led initially to much debate, and then to a great deal of work, as the Board and various experts and groups of experts responded on various aspects of the restructure.

One fundamental matter is the issue of how can we better serve the candidate. In the last issue I raised the issue of accrediting assessors, so that the candidate could get immediate guidance. The only responses of which I am aware have been supportive. That has now been put to the ACA, as has a suggested syllabus for the Foundation Licence, prepared by a small group of experts. Both documents have been placed on the WIA website.

These have been the major issues.

Have we done any more than address those issues?

I think we have.

We have tried to work closely with the Editor and the Publications Committee, trying to ensure a much closer working relationship between the Board and those responsible for the magazine.

We have been supported by a brilliant broadcast team, and have tried to ensure that as much information as possible is made available through the broadcasts.

Perhaps the WIA has, in the last 6 months, changed sufficiently and done sufficient to be able to say to those who decided to "wait and see" that they should now consider becoming a member.

We have changed the website, updated it continuously and released as much information as possible as quickly as possible through the site.

In short, we have worked very hard to ensure that anyone who wants to know what the WIA is doing can find out.

In terms of representing the amateur service, we have had some successes. The WIA proposal that the 160 metre band allocation become primary rather than secondary was accepted.

The WIA submission to the ACA in relation to proposals affecting the 5.8 GHz band was accepted.

The WIA awaits a response from the ACA in relation to its proposal for spot frequencies around 5 MHz.

Much time has been devoted to meeting with the clubs, seeking their support, seeking their views, formulating the criteria for affiliation, and finally negotiating an acceptable liability insurance scheme for the WIA and the clubs.

We have adopted the discount card, previously a privilege of Queensland members, adopted a new membership certificate and caught up with sending them out.

The various national committees, coordinators and representatives continue to serve the WIA, undertaking their various tasks, ranging from involvement in the preparation for the next ITU World Radiocommunication Conference in 2007 to managing contests and awards, coordinating WICEN and many other aspects of the WIA work.

Whenever I try to summarise what the WIA is doing, I am amazed at the number of people doing so many things, for the benefit of amateur radio, and for the benefit of WIA members, and I am also amazed at the number of people we still need, given the extent of our activities.

Yes, I think that many people have worked very hard to make a better WIA, and a more effective WIA, and we have had some good results.

But there is much to be done. Not merely finishing the things that we have started, but doing some things better.

In each state there is an Advisory Committee, created under the WIA Constitution, comprised for the first 3 years from May last year of the members of the former Divisional Councils who were prepared to be a members. The Advisory Committees will be elected every 3 years after that.

To date we have really allowed the Advisory Committees' role to evolve, and while clear directions have been adopted in some states, in others there is uncertainty as to their role.

It seems that the role of the Advisory Committees will vary from area to area, and perhaps it is now time to start defining roles and perhaps even tasks,

continued on page 11

WIA news

Vale Peter Naish VK2BPN

On Sunday 9 January 2005 Peter Naish, VK2BPN, secretary of the WIA and Chairman of Directors IARU Region 3 passed away in St Vincent's Hospital, Sydney.

A moving service for Peter was conducted at St Kevin's Catholic Church, Eastwood, on Friday, 14 January 2005. Secretary Don Beattie, G3OZF, represented IARU Region 1, and Region 3 secretary Keigo Komuro, JA1KAB, represented IARU Region 3 and JARL. A number of the members of the WIA Board as well as many other friends were also present.

A full tribute to Peter is published elsewhere in this issue.

Amateurs provide emergency communications

Shortly after the Tsunami devastated so many places in Asia on 26 December 2004 with such tragic loss of life WIA National WICEN Coordinator John Weir, VK3ZRV placed a number of stations on standby in case communications to the devastated areas were requested. This did not occur, and ultimately the stations were stood down.

Amateurs were able to assist with national communications in a number of countries.

While many reports have been placed on the WIA website, there is no really comprehensive overview at this time.

However, local newspapers have carried stories about the contribution of amateurs. For example the Indian newspaper, Hindu Times has reported on amateur radio activities during the emergency, and the Singapore Straits Times carried a story on the contribution of the Indian amateurs on Andaman Island.

WIA publishes its suggested Foundation Licence syllabus and accredited assessors framework

Last year the WIA Board appointed a small working group of experts to prepare a draft syllabus, initially for the proposed Foundation Licence, and based on that, for the proposed standard and advanced licences. In addition, a framework for the accreditation of assessors of competency in amateur radio has been prepared.

The working group comprises Ron Bertrand, VK2DQ, Lee de Vries VK3PY, Carlo Gnaccarini VK3BRZ and Fred Swainston, VK3DAC.

The suggestion of accredited assessors was raised in the WIA Comment column in the December 2004 issue, and to date the only feedback has been supportive.

The WIA proposes that the present system of invigilators/examiners run parallel with the proposed assessor accreditation system, allowing time for clubs, the heart of any widespread system to have their people accredited. Indeed, if because of distance or other reasons, the present system continues, particularly in remote areas, the WIA believes that is better than having no facility at all.

The WIA has forwarded the documents to the ACA as drafts for its consideration, and has published them on its website, www.wia.org.au

Club affiliation and insurance documentation posted

In mid December 2004 the WIA National office posted explanatory documents and application forms relating to club affiliation and insurance to every club that could be identified.

These documents are now available for download from the WIA website, under "Clubs".

It is hoped that as many clubs as possible will become affiliated with the WIA, and give serious consideration to the public liability insurance that has now been made available.

AX for Australia Day

Australian amateurs were allowed to use the AX prefix to celebrate Australia Day on January 26, with the period of use running from 26 0001 to 26 2359 hours local time.

WIA releases BPL Report

On 14 December 2004 WIA President Michael Owen, VK3KI, announced that the WIA Board had adopted a report prepared by its specialist group, the WIA BPL Working Group, charged with the responsibility of monitoring and analysing the development of BPL - Broadband over Power Lines.

The report is a comprehensive review of BPL in the Australian context

The report contains a description of BPL, its advantages, disadvantages and risks from the perspectives of the relevant stakeholders. It concludes that the WIA is not opposed to BPL per se, but is opposed to conduct that results in substantial interference with radiocommunications or substantial disruption or disturbance of radiocommunications. The WIA believes that is fortunate that BPL is not the only way ahead, as it is confident that advances in emerging technologies will meet Australia's growing need for Internet access.

ACA announces conditions for BPL trials

The WIA wrote to the ACA on December 9 outlining the WIA concerns as to the possible interference caused by BPL trials to the HF radio spectrum. The Authority replied to the WIA addressing the WIA concerns and on January 21 2005 the ACA released the guidelines applying to such trials.

The WIA has published the two letters on the WIA website and added a link to the ACA BPL pages which include the guidelines.

WIA director interviewed on Melbourne radio station

WIA Director Phil Wait VK2DKN was interviewed on Melbourne FM radio station 3MDR in relation to BPL issues. The station transmits on 97.1FM and each Saturday between 12:00-14:00 hours features a program called TekTime.

Australian Amateur now primary at 160

The ACA has now published the Australian Radio Frequency Spectrum Plan, replacing the earlier plan of January 2002.

In identifying the changes made to the Table, the Authority says that it has promoted the amateur service to primary status in the 1825 – 1875 kHz band. Previously the amateur allocation at this band was secondary.

The WIA is particularly pleased, as this change accepted in full the WIA's submission made during its involvement in the consideration of the draft table.

Interestingly, despite removal in some states, the band 420 - 430 MHz remains allocated on a secondary basis to the amateur service.

ar

Building a Q meter

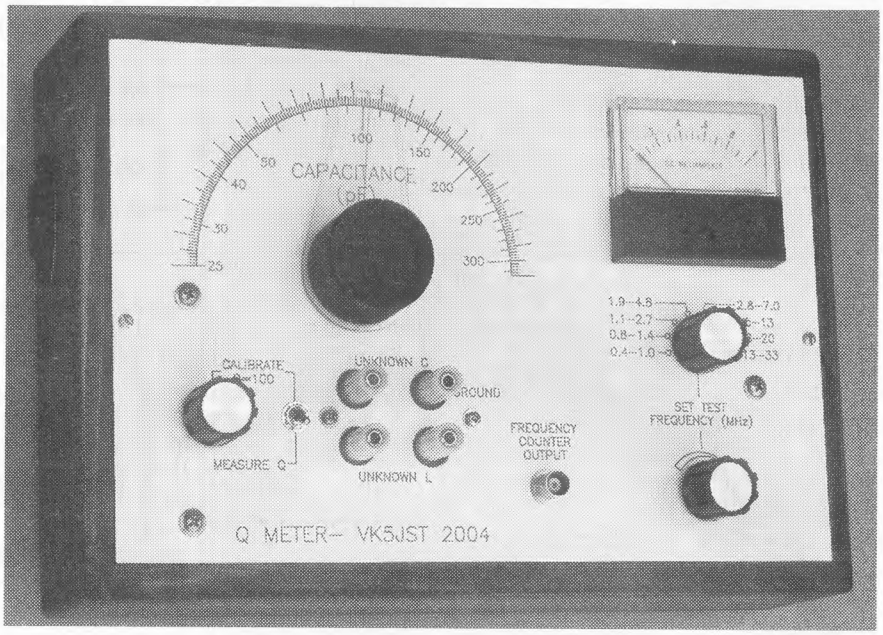
Jim Tregellas VK5JST

Want to design and measure inductors? Want to measure small capacitors at their frequency of use? Want a cheap signal generator? This is the one to build!

Q meters have been around since the 1930s. They are still available, and a search of the internet will reveal that they cost upwards of $3,000. To some extent they have been replaced by instruments such as network analyzers, but what radio amateur can afford the $60K price tag for such equipment? Apart from the price problem, the sheer automation of such instrumentation often makes it difficult to develop an engineering feel for what is going on, and so the manually operated Q meter has a lot going for it.

The principle of operation of the Q meter is based on the series resonant LC circuit. Of course numerous mathematicians have analysed this circuit ad nauseum, creating great confusion and complexity. But what is going on is really quite simple.

At resonance, if the circuit is efficient (low losses), the inductive and capacitive reactances are equal but of opposite sign, and very much larger than the loss resistance. Because of their opposite phases, the voltages across the inductor and capacitor cancel, leaving the applied voltage to appear across the loss resistance. This establishes the current which flows around the circuit, generating much larger voltages across the capacitor and inductor than across the loss resistor, and the circuit thus exhibits a voltage gain. If the losses are reduced, the voltage gain and selectivity of the circuit will further improve. This brings us to the best definition of Q, and explains how the Q meter works (see Fig 1).



This also is how a crystal set works. A very small AC voltage from the aerial is selected and magnified by the tuned circuit, appearing much enlarged across the tuning capacitor where it is rectified and applied to headphones. No amplifiers or power supplies, and no wonder Grandpa got excited.

So Q is very important. As Fig 1 shows, we measure it using a calibrated wide range RF signal generator (to generate the input voltage E) and a high impedance AC voltmeter to measure the voltage across the tuning capacitor. If E is known and fixed then we can calibrate the AC voltmeter directly in terms of Q.

The inductor we are designing/testing is of course L. Note that the losses in most well made capacitors are far less than those existing in practical inductors and can generally be ignored. Certainly that must be the case in this test circuit, where the tuning capacitor will have a Q much greater than 1000, and hence negligible losses, if it is chosen as detailed later in this article.

The reasons for this are not hard to understand. Firstly, the dielectric is air, and the only less lossy dielectric which could be used is a vacuum. Secondly, capacitors are collections of short thick conductors (the plates) where the resistance of each plate appears in parallel with those of the other plates - resulting in very low resistance. Inductors on the other hand are just one long thin conductor.

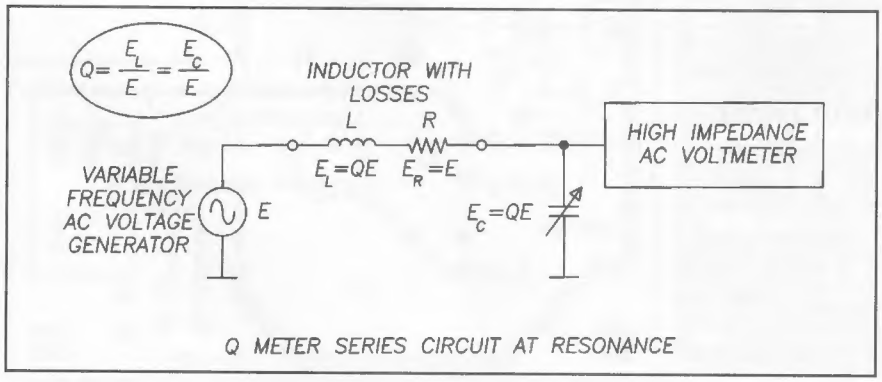


Fig 1 – How the Q Meter works.

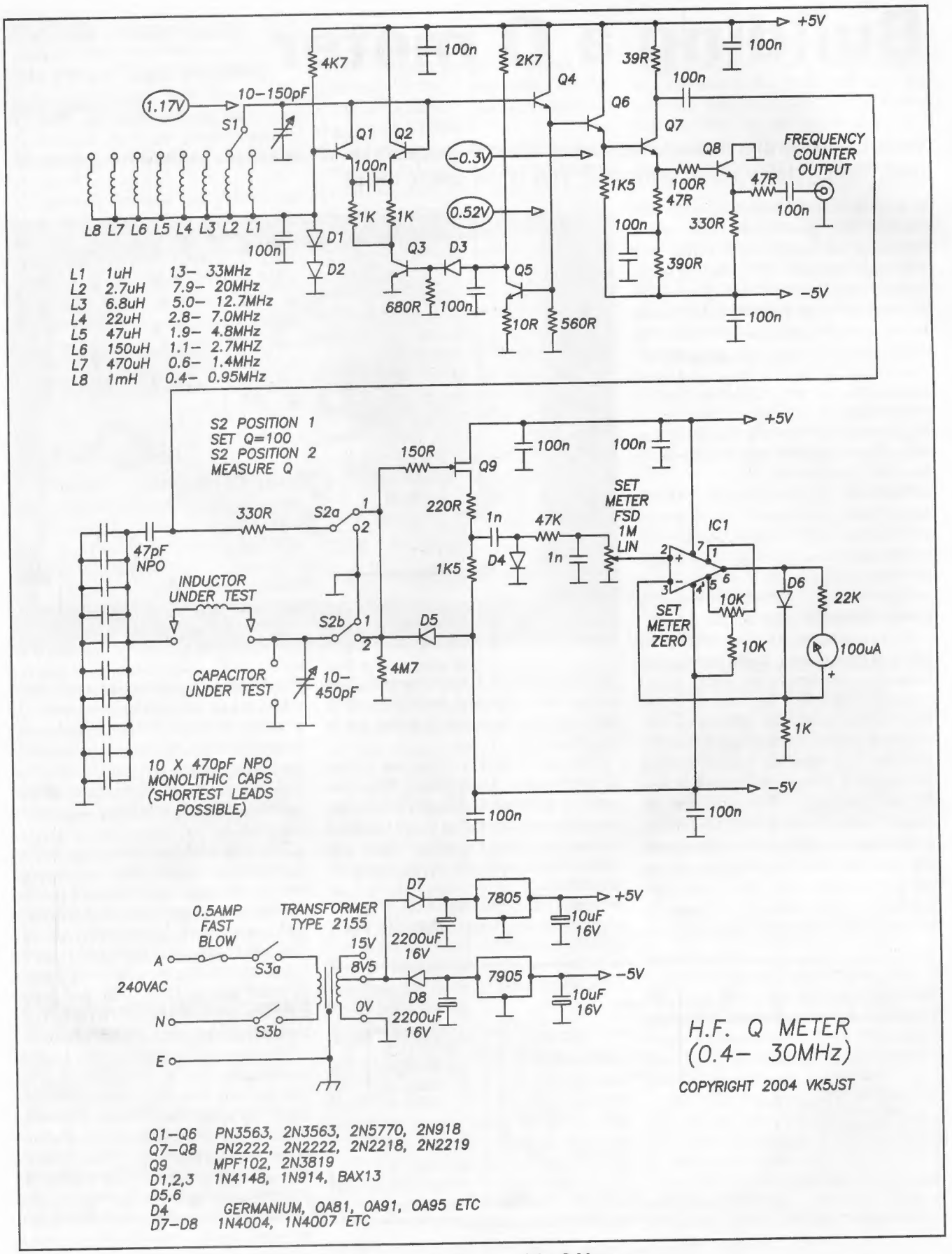


Fig 2 – Circuit diagram of the Q Meter.

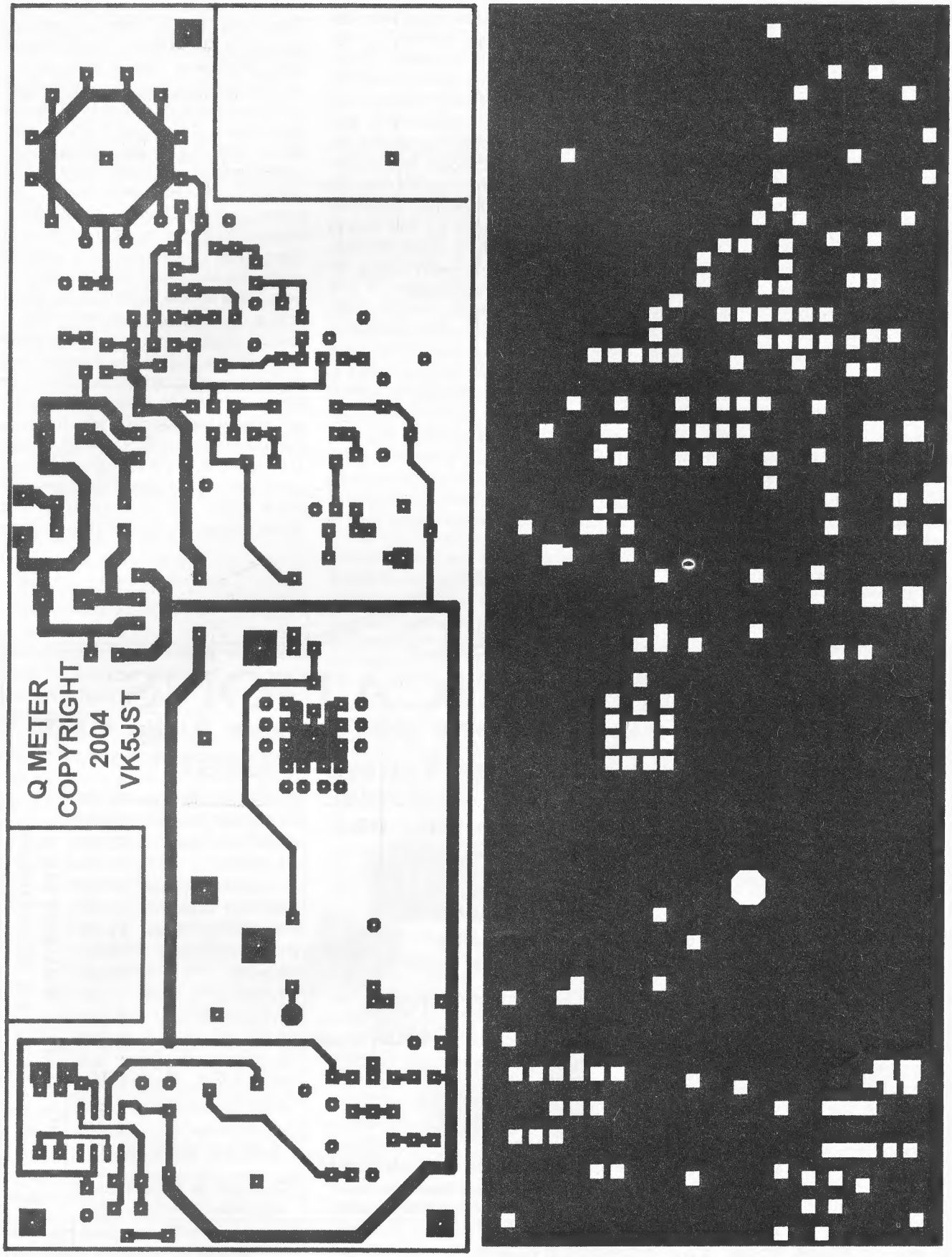


Fig 3 – Artwork for the circuit board.

How it works

The circuit, Fig 2, can be broken down into the three sections previously mentioned:

1. RF signal generator
2. test circuit
3. high impedance AC voltmeter.

The RF signal generator consists of a wide range RF oscillator with AGC and buffering to provide a near zero output impedance to drive the test circuit. To the best of the author's knowledge this circuit is original and was probably patentable before publication. It is one of those rare designs which provide a clean, constant amplitude sine wave output over an enormous frequency range using bog standard devices, and is an ideal oscillator to power things such as aerial bridges, signal generators and other bits of test gear. It will work from audio frequencies to well over 100 MHz. In this design, off the shelf inductors (advertised by DSE, Jaycar and others as RF chokes) are used to provide continuous coverage from 400 kHz to 30 MHz. It is a wide band power circuit, and to avoid unwanted dips in the output amplitude, must be carefully laid out using short leads over a ground plane. Careful RF bypassing is also necessary. Of particular importance, the inductors L1 to L8 should be carefully separated so that stray capacity coupling does not cause interaction. Under no circumstances make up the values specified with a long chain of series inductors, as this is really asking for trouble at higher frequencies.

The circuit operates as follows: the oscillator itself is made from an emitter coupled differential pair (Q1 and Q2) coupled in circular fashion (base to collector: emitter to emitter) to provide wide band power gain. The frequency of oscillation is determined by a parallel tuned circuit in the collector of Q1, which causes the gain of this transistor pair to be maximum at a single frequency. Unlike most oscillators which start in class A but run in class C, these two transistors run in class A under steady state conditions, due to AGC action. As the operating frequency is changed with the variable capacitor, the dynamic impedance of the tuned circuit also varies, requiring the amplifier gain to be varied if a constant amplitude sinusoidal output voltage is to be obtained. The power gain of Q1 and Q2 is simply determined by the current flow through them, which is maximum at startup when the amplitude of oscillation is zero, Q5 is off and Q3 is thus saturated with a collector potential very close to ground (10-50 mV). As the amplitude of oscillation builds, the positive half cycles appearing at the base of Q5 cause it to draw collector current, reducing the potential at the base of Q3 which in turn reduces the current flow through Q1 and Q2. Note that under no signal (starting) conditions, Q5 is biased to the edge of cutoff with 0.4 V on its base, but that under running conditions it has a voltage

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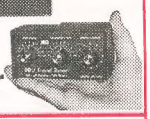

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gain of around 270 (2700/10) ensuring very good AGC action. The AGC action may be watched by measuring the DC drop across either of the 1k emitter resistors of Q1 and Q2 with a DVM. As the frequency is varied from 0.4 to 30 MHz, the DC drop will vary from a few millivolts to several hundred millivolts depending on frequency and tuned circuit Q.

The circuit is not working correctly if the AC signal amplitude at the collector of Q1 is greater than about 850 mV p-p. At amplitudes larger than this, there is a risk that Q1 will saturate, AGC action cease and a non-sinusoidal output occur. If the circuit is working correctly, around 650-750mV p-p should appear at the emitter of Q4. Typical DC voltages around the circuit with a very short length of wire between Q1 collector and base (5mm max) and hence no oscillation are:

Q1 base and collector, Q2 base, Q4 base 1.17 V
Q1, Q2 and Q4 emitters 0.43 V
Q5 base and emitter 0 V
Q5 collector 1.31 V
Q3 collector 15 mV

All these figures are at normal temperature and a supply voltage of 5.00 V. Note that the circuit will work correctly from 4.0 to 6.5 volts without modification.

The sine wave appearing at the emitter of Q4 is buffered by emitter follower Q6 which in turn drives a wideband power amp Q7. This stage has a bandwidth of around 70 MHz and drives the test circuit. It also drives Q8 providing an output for a frequency counter and/or for use as a 50 ohm signal source. The driving voltage E for the test circuit of around 7 mV p-p is provided by a 100:1 capacitive divider consisting of 47 pF and 4700 pF, derived from Q7 collector. This provides a source with very low internal impedance relative to the test circuit impedances. Note that the top of the divider chain has a voltage 100 times greater than the output and so can be used to calibrate the meter for Q = 100.

The usual approach for obtaining a driving voltage with a low internal impedance is to follow the generator with a resistive divider having an output resistance of around 0.02 ohm. This resistance is negligibly small in comparison to the losses in most tuned circuits. However this technique is only possible if you are a manufacturer and can have special non-inductive resistors made with zero lead lengths. Standard resistors cannot be used for this application because even very short connecting leads will introduce impedances which are far larger than 0.02 ohm at 30 MHz and all calibration will be lost. The use of monolithic capacitors is a far better approach but has only recently become possible because super miniature monolithics are now being made in sizes of up to 820 pF with NPO dielectrics (Jaycar, DSE). Unlike the high K dielectrics previously used, these capacitors have zero temperature co-efficient allowing a stable temperature-independent capacitive divider to be constructed. Provided the leads are kept very short on these capacitors, they remain very 'pure' components at 30 MHz and unlike resistors do not introduce losses into the tuned circuit. Moral - keep the leads on the 470 pFs near zero length.

The test circuit is the next item for examination. Keep all the leads around it short and direct so that you really measure the inductor being tested, not the test circuit. The printed circuit board has been drafted so that any good quality miniature air variable capacitor can be mounted (no mounting holes – just a general area). Do not use the miniature transistor radio variable capacitors on sale with plastic insulation between the plates. The best quality capacitors will have a good electrical friction contact between the shaft and frame next to the PCB, and hopefully one at each end of the shaft. Use the best you can get your hands on for the test circuit. The oscillator is much less critical of component quality. Professional air variable capacitors have silver plated brass plates and a very good electrical connection between shaft and frame, and are ideal for making a really first class instrument. You do not have to use either of the variable capacitor values specified which are only published as a guide.

Last we have the AC voltmeter. A source follower Q9 with lots of extra features to stop it oscillating provides a 4.7 Mohm input impedance and drives a half wave rectifier D4. The resultant DC output is applied to a meter via a pot which allows a Q of 100 to be set to any convenient point on the meter scale (e.g. to 20% of FSD giving Q =500 at

Antenna

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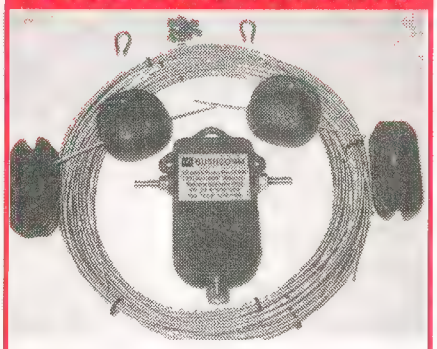
(with a lot of help from your Bushcomm kit)

SWCS-KIT HF ANTENNA



This is a kit version of our popular SWC-100S single wire model, but you have the great satisfaction of constructing of your antenna.
Easy to follow, comprehensive instructions.
Common tools required.
You save money and have fun

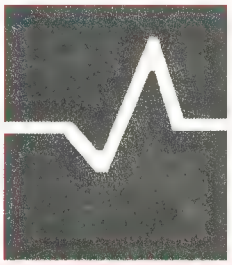
Once completed correctly your antenna will be a replica of the SWC-100S model. This is a single-wire, base-situation antenna, constructed with stainless elements to give high resistance to corrosion. It has a length of 34m in total. Trees, buildings or other structures can be used to suspend the antenna, (avoid running the antenna over iron-roofed buildings as this reduces the effective height above ground). The antenna can be mounted either horizontally between two supports, or as an inverted 'vee'

Frequency Range: 2-30 MHz
Impedance: 50 OHM
Power Input: 100 Watts, 250 Watts PEP

This kit contains:
Balun (x1) Load (x2) S/S Thimbles (x2)
Copper ferrules (plus a few practice extras))
Large egg insulators (x2) 4 cut lengths of wire.

FULL and CLEAR
building and mounting diagrams

Bushcomm



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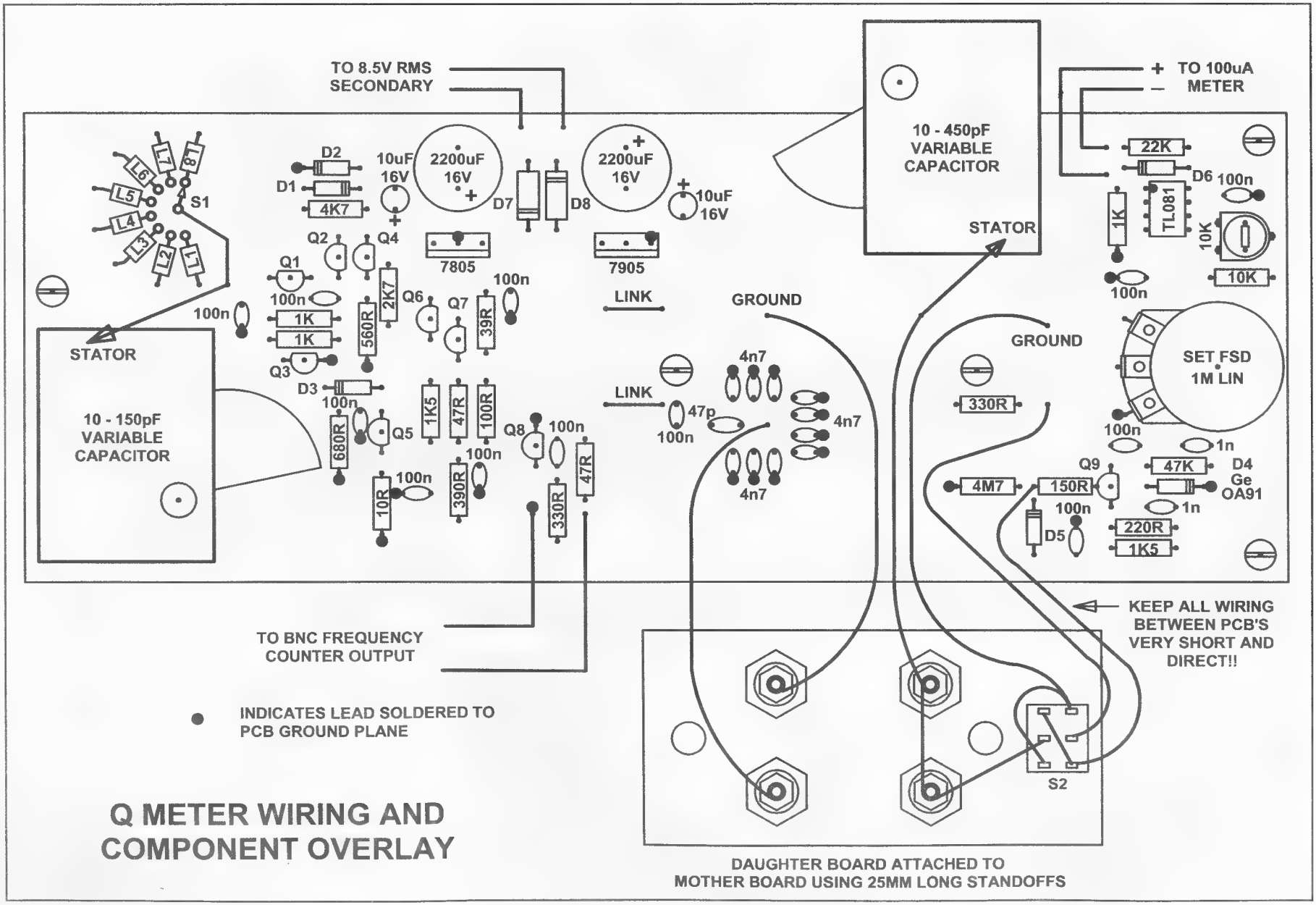


Fig 4 – Main circuit board component overlay.

FSD). The meter zero is set using a 10 K trimpot which cancels the effects of the amplifier dc input offset voltage.

Calibration

Calibration of the instrument is very simple. No calibration of the RF oscillator is provided as these days frequency counters appear in most amateur shacks and are very much more accurate than dial scales. The precision tuning capacitor in the test circuit is calibrated using a DVM on its 4 nF (4000 pF) range connected to the inductor terminals. In this way the effect of the 4700 pF driving capacitor is included in the calibration. S2 should be switched to the MEASURE Q position. Before starting calibration, adjust the SET METER FSD pot. so that the amplifier input is zero. Also make sure that the square wave applied by the DVM to the test circuit isn't so large that D5 (the FET protection diode) is forced to operate These precautions will prevent 'meter bashing' and inaccurate dial scales.

Using the instrument

To use a Q meter is simplicity itself. You simply plug in the coil you are designing/testing and adjust frequency and system capacitance until the meter peaks. You don't even need to calculate the inductance. All you need to know is that the coil works successfully at say 14 MHz exhibiting low losses with the value of resonating capacitor you picked. You adjust turns and coil size/shape until this occurs - what could be easier? To measure small capacitors, you use a known inductance which will resonate at the frequency you want to use with the tuning capacitor set to near maximum value. You then add the unknown capacitor in parallel with the tuning capacitor, and without adjusting the frequency, back off the tuning capacitor until resonance occurs again. The difference between the two tuning capacitor values is the value of the unknown. Unfortunately there is no room in an article such as this to cover more than the basic uses, but you can do all manner of RF measurements if you are sufficiently devious, including transmission line measurements - read the literature and you will be staggered at how flexible a Q meter is.

ar

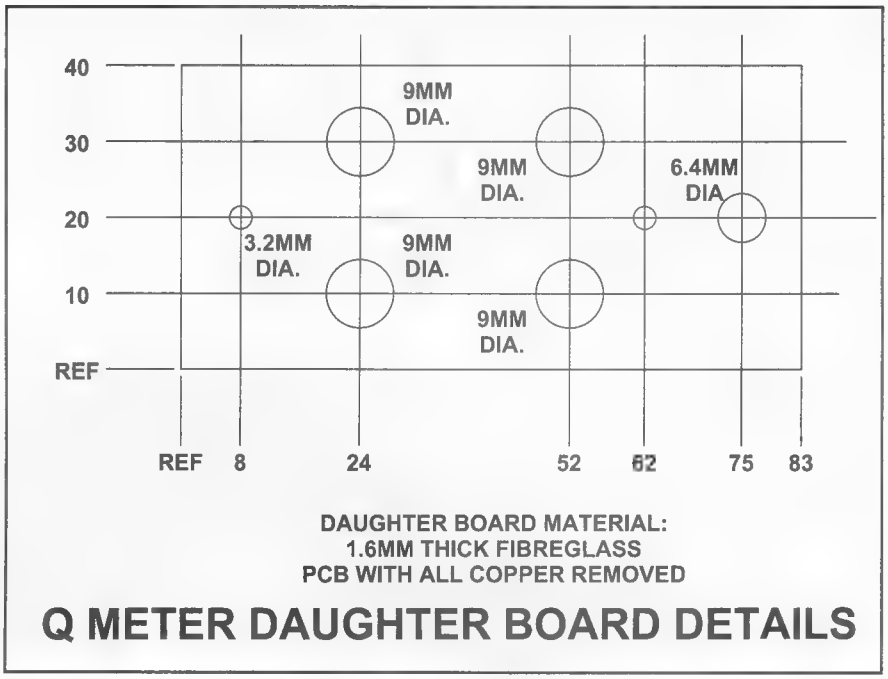
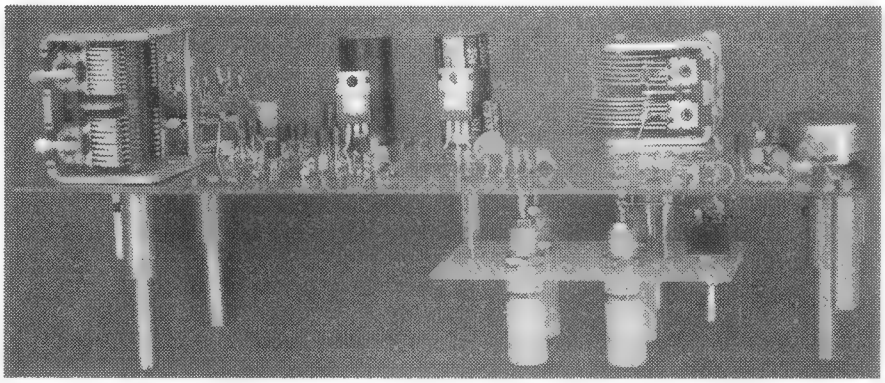


Fig 5 – Daughter board details.



WIA Comment *continued*

and ensuring better consultation between the WIA and its Advisory Committees.

The Foundation Licence will be one of the great challenges of 2005. Will it attract new amateurs? Will the clubs make it attractive? Will we as existing amateurs welcome the newcomers? Will the new licensees seek to move to a higher qualification? Will they support the clubs? Will they support the WIA?

It is obvious, I think, that many people who spend so much time working for amateur radio and the WIA believe that we can meet those challenges. Otherwise why would they bother?

Can we make the WIA something that every amateur will want to support?

I know that when the WIA adopted its new Constitution and became a single, national body so that all amateurs could become direct members, there were some people who said that they would wait and see how the "new" WIA performed before they would become a member.

Perhaps the WIA has, in the last 6 months, changed sufficiently and done sufficient to be able to say to those who decided to "wait and see" that they should now consider becoming a member.

Can you, as a member, say that to someone who is not a member?

I hope so.

And I hope that you do.

ar

A compact, effective vertical antenna for 160 metres

Part 2 – *Construction*

Drew Diamond VK3XU

Radiator

The vertical component is a 6 to 6.5 m length of ordinary 32 mm ($1^1/_4$") aluminium tube. See Figure 8.

Genuine all stainless-steel 17 ~ 38 mm hose-clamps are ideal for attaching the various components to the aluminium tube. Solder lugs, made from zinc-plated sheet, are suggested for making the electrical wire connections to the aluminium tube. Aluminium, zinc and stainless steel are fairly compatible, so severe electrolysis should not be a problem. However, to prevent corrosion, it is good practice to use jointing compound or grease between components to exclude moisture. Do not put plain copper and another material together directly.

Photo 2 – Base insulator.

Insulators

For the base insulator, a 200 mm length of "20 mm" PVC pipe (actually 27 mm od - very confusing) is fitted inside the base of the 32 mm aluminium tube. External to the aluminium tube is fitted a 180 mm length of "25 mm" PVC pressure pipe (actually 32 mm od). They may be riveted or screwed together, as illustrated in Photo 2.

The base insulator rests in a 27 mm hole in an aluminium base-plate, which is made to fit across the peaks of the decking roof, and held there with two small G-clamps, as pictured in Photo 3. Note the right-angle aluminium bracket for the coax connector.

The top insulator is a 300 mm length of "25 mm" PVC pipe, inside which the main aluminium tube, and a 180 mm length aluminium top section tube are inserted, as shown in Photo 4. They should be riveted or screwed as for the base insulator. My experience of so-called "25 mm" PVC pipe is that some brands are a little smaller than 32 mm od. If this is the case for you, the PVC pipe may be persuaded to expand onto your aluminium tube by dipping the PVC into boiling water, then carefully and repeatedly working the PVC pipe onto the aluminium tube. File a bevel onto the opening of your 180 mm aluminium top tube for use as work-piece for the job.

Coil

The 118 microhenry loading coil is composed of 65 turns of #13 B&S/15 SWG (1.9 mm) enamelled copper wire space-wound upon a 280 mm length of

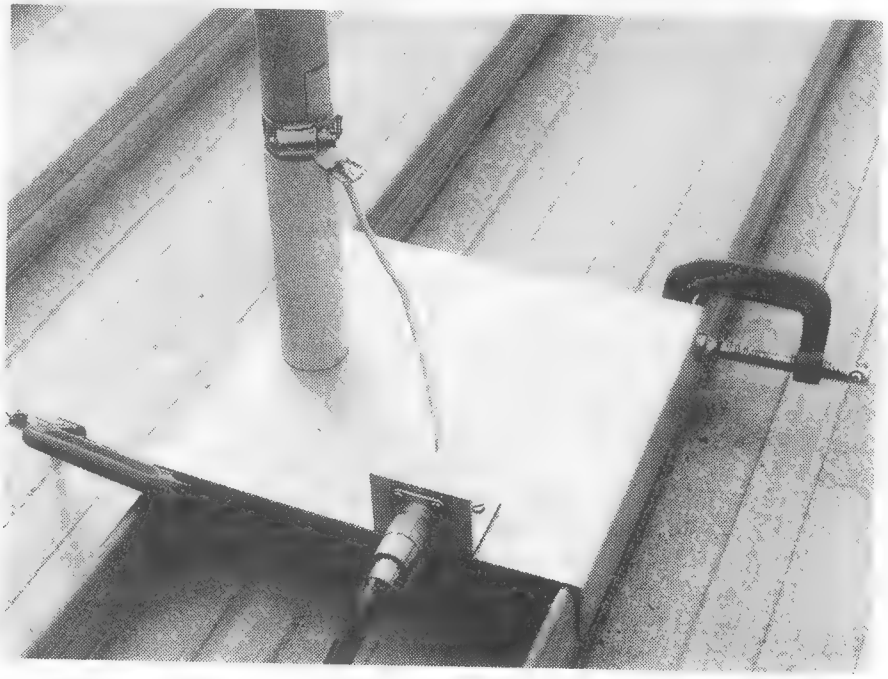


Photo 3 – Base assembly.

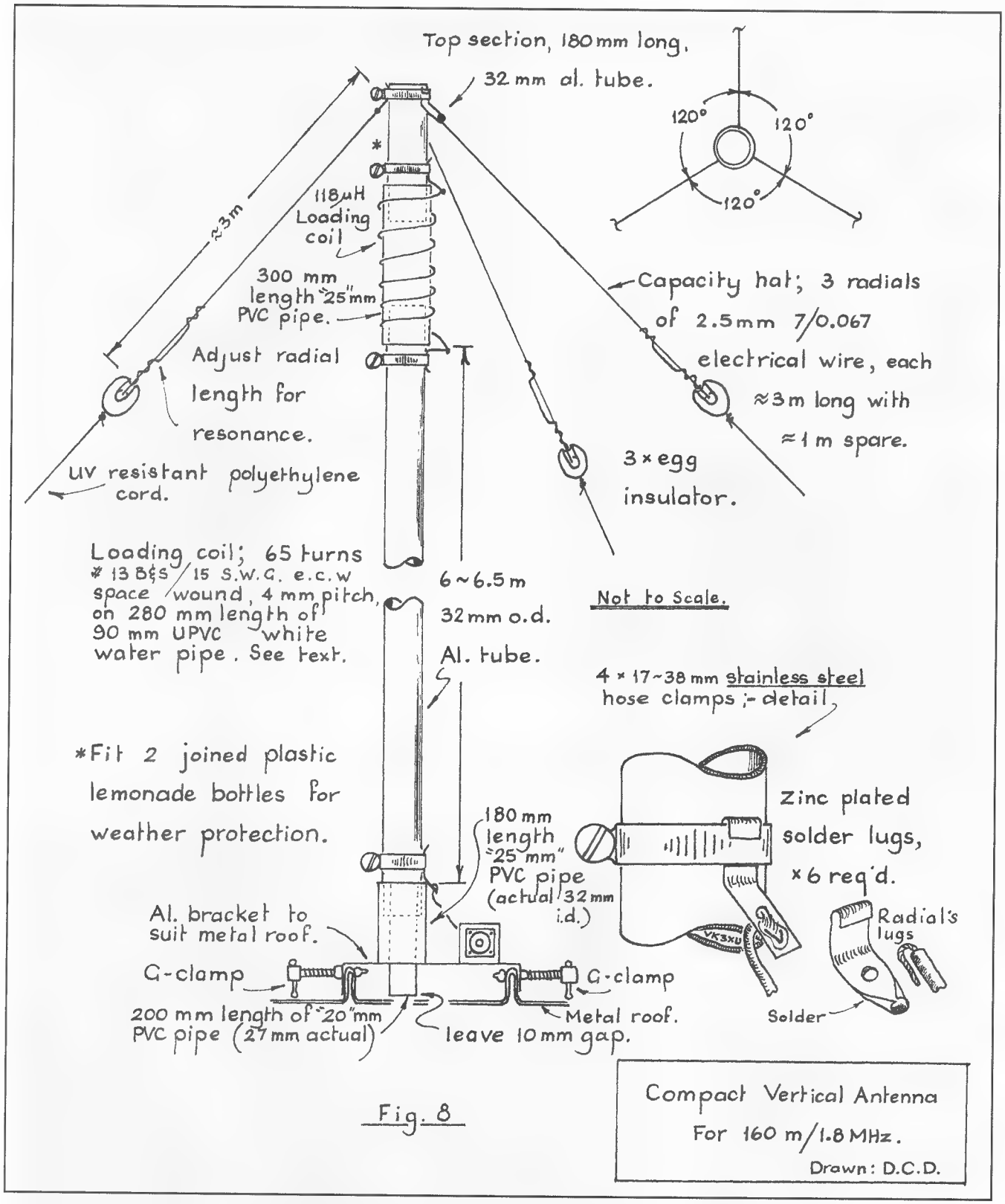


Fig 8 – Construction details of the compact, effective vertical antenna for 160 metres

white (not grey) 90 mm od UPVC water pipe as a former. To aid in getting the spacing even, mark a line down the length of the pipe, then mark off 65 lines spaced 4 mm upon the longitudinal (which leaves 10 mm at each end). Hint: find an object, such as a drill shank, a tad smaller than 4 mm for use as a gauge to mark off each line. Using a triangular file, carefully form a notch at each of the 65 lines, as illustrated in Photo 5. Drill a 2 mm hole leading into the first notch, and another leading out of the last notch for the wire to enter and exit the pipe former (Photo 6).

You will need about 20 m of wire. Fix the wire end (or spool) in a vice, then run the wire out to its full length. Remember to pocket your long-nose and bull-nose pliers and cutters. Using bull-nose pliers, give the wire a firm pull to take out any small wrinkles. The wire should stretch about 100 mm in the process. Poke the wire end through the hole leaving a tail of about 200 mm, then put a bend in the wire so that it cannot slip out. Whilst keeping the wire taut, walk towards the vice, maintaining a good tension all the while. Make sure that each turn registers into each slot. Don't worry about any small wanderings - they can be straightened up when the coil is fully wound.

With the 65 turns applied, grip the coil firmly so that it cannot uncoil and cut the wire, leaving about 200 mm for the tail. Poke the wire through the hole, then grip the free end with pliers and firmly pull the wire whilst pressing that last wrinkle down through the hole with your thumb. Immediately put a bend in the wire to secure it.

Straighten out any small variations between turns so that they are evenly spaced. Apply a bead of hot-melt or epoxy glue along two or three longitudes of the winding.

A 90 mm end-cap is glued on to the top of the coil former, which allows the coil to rest upon the top insulator and thus take the strain off the coil's wire connections. The cap must have a 32 mm hole in the middle, and a 2 mm hole near the perimeter for the coil's top wire to exit. My completed coil is shown in Photo 7.

It was found that rain-water upon the coil does not appear to cause serious degradation. However, to avoid corrosion, and reduce the need for substantial re-match after rain, it would be prudent to protect the coil from the weather.

Photo 8 shows my coil, over which modified two litre plastic lemonade bottles have been fitted. The neck has been removed from one, where the remaining opening has been enlarged to just a smidgen under 32 mm. The second bottle has had its top and bottom removed. The resulting cylinder is fitted inside the first, then a bead of silicone sealant has been run around the join. The bottom should remain open to permit ventilation. The assembly is pushed onto the top section and siliconed just prior to the top radials being fitted.

Capacity Hat

The three capacity hat radials are (initially) 4 m lengths of 7/067 electrical wire soldered to three zinc plated lugs, which are slid well under the top hose clamp at about 120 degree intervals, then bent over as shown in the drawing detail and Photo 8. To provide some strain relief, the solder lugs should be wrapped around the wire (using bull-nose pliers). Use UV resistant polyethylene cord (usually black) as the guy ropes, which may be tied to convenient, or purpose-made, points on or about the roof line.

Egg insulators provide a handy thimble for the radial wire but, more importantly, it was found that the black cord becomes slightly conductive when wet - hence the insulators.

Photo 4 – Top insulator.

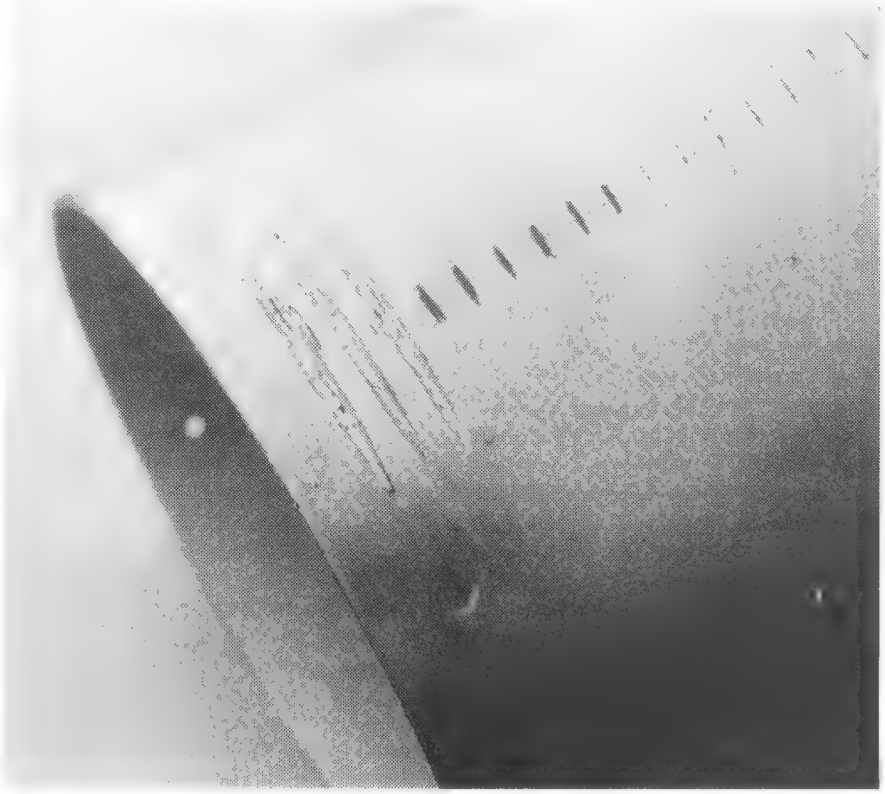


Photo 5 – First three of 65 notches.

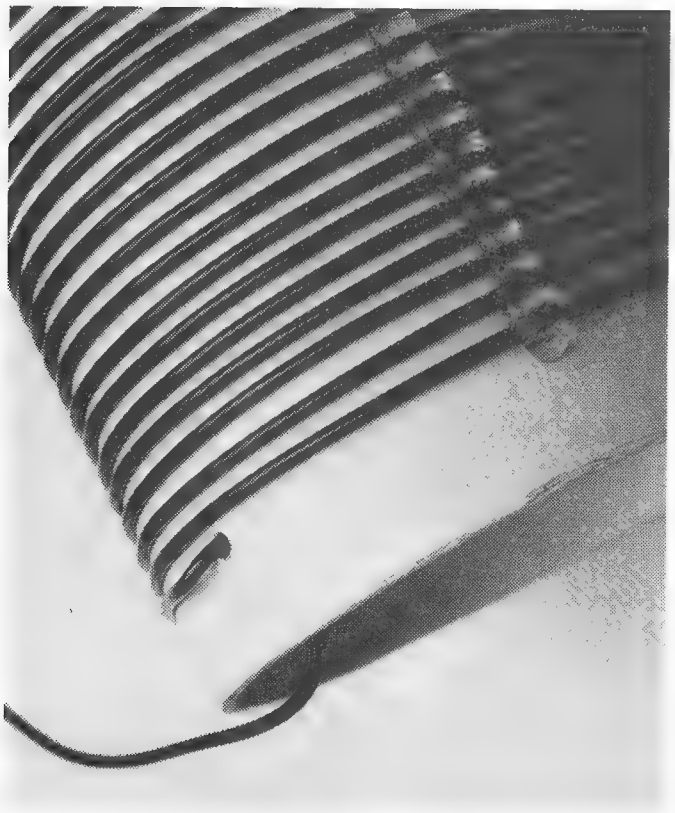


Photo 6 – Coil detail..

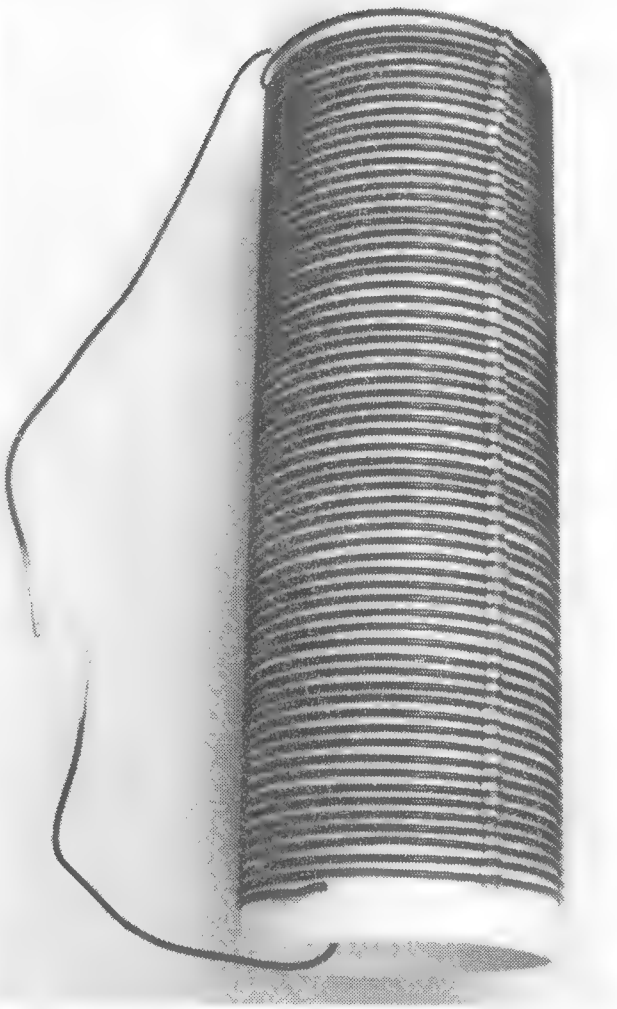


Photo 7 – Complete coil

Commissioning

Erection is a two-person job - one to push the antenna up, then hold it vertical, while the other clambers around and ties off the guy ropes.

If you have an antenna analyser, then you will know what to do. Or the antenna may be resonated using a dip meter. To improve frequency accuracy, it is a good plan to have a receiver operating near the middle of the band (say 1840 kHz), either a portable battery set near the base of the antenna, or the main station receiver within hearing range (BFO on).

Solder a 2-turn wire link, slightly larger diameter than your dipper's coil, to a PL-259 plug, which is inserted into the base connector. Place the dipper's coil near, or inside the link coil, then sweep the dipper around 1.8 MHz. You will find that the antenna radiates the dipper's signal very effectively. Look for a dip. It will probably be rather shallow and broad, so observe the dipper's meter very closely.

If the resonant frequency is too low, shorten each top radial by the same amount. Try about 300 mm at first to get a "feel" for the procedure. Lengthen the radials to lower the frequency. Hopefully, you won't have to repeat the performance too many times. Remember, the ATU/coupler is going to be in the shack, so the resonant frequency has only to be somewhere near the middle of the band.

To reduce the intensity of the E-field inside the building (in my case, by -17 dB on the near-field), and provide some lightning protection, the roof should be effectively grounded. Fortuitously, for the prototype it was possible to connect the roof to one of the metal uprights of a nearby carport, using a length of "hoop-iron" for the job.

Coupler

Impedance at the base of the radiator is about 20 ohms resistive at resonance, which represents an SWR of 2.5. At 1.8 MHz, any loss due to this mismatch will be very small in good quality coax (eg RG-8) less than $^{1}/_{8}^{th}$ wavelength long (about 20 m). The necessary ATU/coupler may be any of the "transmatch" or "T-match" configurations (the usual circuit used in recent commercial ATUs).

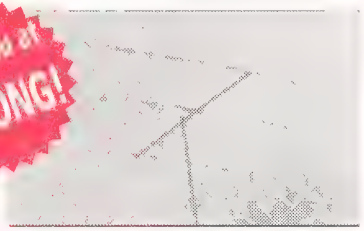
Rather than tie up your HF ATU/coupler, however, it is suggested that a purpose-built unit be used. Depending upon the impedance seen at the transmitter end of the line, it may be purely resistive, or resistive with a capacitive or inductive reactance. Theoretically, a coil and capacitor L-network should do the job of matching. It is found that at some point in the band, the necessary arrangement swaps from needing to be C on the transmitter side, L in series, to C on the line side, L in series.

The solution, of course, is to use a pi-coupler, consisting of two, 2-gang broadcast capacitors and a tapped 13 microhenry series coil. Provision is made for connection of extra fixed mica capacitor(s), up to about 1500 pF, across

TET-EMTRON

TE-33
3 ELEMENT
3-BAND BEAM

See you at WYONG!



The TE-33 - the most popular tribander, has proven itself in the most severe storm conditions on the Pacific Islands. Its excellent performance and features on all 3 bands such as wide bandwidth, high gain, low SWR and high F/B ratio gives you all the features.

ED52c

Wire dipole for 80 and 40.

This antenna can be used as an "inverted V" or just a straight dipole.It is resonate on 80 and 40 but can also be used on 20,15 and 10 meters.It comes with 30.5 meters of cable.

Dealers

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either variable capacitor to permit an efficient match to be made between the transmitter's output, and the line input.

Parts

Aluminium tube, 32 mm od ($1^1/_4$") is available in 6.5 m lengths from Caplan (Alcan). Melbournians may be interested to know that Challenge Metals (recyclers, phone 1300 653 625) have (at writing) 6 m lengths of 32 mm aluminium tube for about $9 per length. The PVC components were purchased from Bunnings, who supply PVC pipes in various short lengths of various sizes. Stainless steel hose clamps may be obtained from auto parts suppliers. For enamelled copper wire suppliers, look up "magnet winding wire" or "transformers" in your local Yellow Pages phone directory.

Conclusion

Urban amateurs may be prevented from exploring our 1.8 MHz band by the perceived difficulty of erecting an effective antenna in restricted circumstances.

A vertical antenna is the most accepted all-rounder for 1.8 MHz work. Where a reasonably-sized conductor, such as a metal roof, is available for use as a "ground-plane", it has been practically demonstrated that a fairly compact, loaded vertical antenna, made from procurable materials, is capable of providing very acceptable performance, both for local and long-distance work.

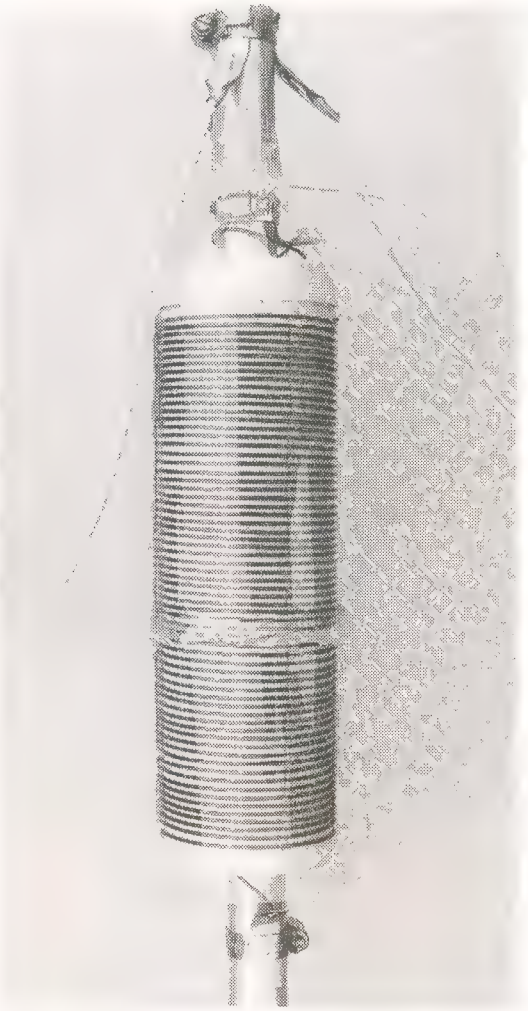


Photo 8 – Loading coil with radials connected at top.

Acknowledgment

My thanks to the friendly 160 metre gang, particularly the "Coffee-break" (11 am Monday - Saturday, 1843 kHz AM) fraternity, for their comparison reports, helpful suggestions and technical advice

BR

URUNGA RADIO CONVENTION

March 26 & 27

The Urunga Convention is held at Easter each year on the Saturday and Sunday, every one is welcome. It's held in the Senior Citizens hall in Bowra Street Urunga
(see **Club news**, *page 41)*

Silent key

I.D. McNabb (Sandy) VK3AMN

13-05-1919 – 16-07-2004, 85 years

Sandy was born in Caulfield (Victoria), but spent his early school years in Branxholme (Western District). His first interest in radio was a crystal radio built from a kit. He passed his exam for a full call licence VK3AMN on 6th April 1949. From then on there was no stopping him, he was always building or constructing some type of "home brew" transceiver or antenna. My early memories are of hearing the CQ, CQ DX calls coming from the radio room at the end of the corridor in Windsor and later his shack in Boronia. In 1956 Sandy built a TV receiver using an article in an amateur radio magazine as a guide. We were the most popular people in the street with lots of visitors to watch TV. In 1957 Sandy was proud to move into his own QTH in Boronia with his young family, XYL Jean, and children John, Ed, Elizabeth and Jim. Here he built a garage with the sole purpose of having a Radio Shack and workshop separate from the house. His first antenna tower was built from a ladder going straight up into the sky, using guy wires tied to the fences and trees. On top of this was a cubical quad made using bamboo canes for spreaders. (This was for 20 m, 15 m, and 10 m). The rotator was made from the diff of a Ford 10 Prefect and an aircraft flap motor. In 1989 Mum and I bought him a 2nd hand Nally tower for his birthday, he put a TH3 junior with other commercial antennas on it. He was often fiddling or changing the antennas to get them just right, often with the help of family or friends.

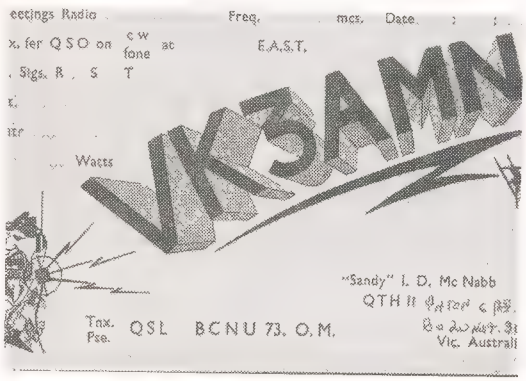
Over the years Sandy enjoyed many forms of amateur radio including fox hunting, going mobile or being portable when on holidays. This was before the days of mobile phones when you could talk to many people on the radio when out and about in the car. Sandy loved to buy new rigs and was interested in all the latest gear even getting involved in amateur satellites, RTTY, Packet and PSK31.

After the death of his beloved XYL Jean in 1991 Sandy started to import his gear into the house, first onto the lounge table and then into the spare room which became the radio/computer room. This was so he could keep in touch with his mates without having to venture outside in the hot/cold/wet weather.

Sandy's idea of open house was to have anyone with an interest in amateur radio into his shack to discuss the many ideas of communications. This included having scouts for Jamboree of the Air for many years. There were also many occasions when Hams from overseas or just up from the country would call in to visit. Sandy even managed a return visit to some friends from Japan.

Sandy was slowing down a bit in later years, but still tried to keep up with his radio and computer until he lost the battle after a short illness.

Elizabeth McNabb (his daughter)



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Tri band HB 35 C 10/15/20m	$745
3 ele 20 m comp opt	$420
log periodic 9 ele 13 30 8.4 m boom	$990
log periodic 8 ele 13-51 MHz 5.5 m boom	$783
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Opinion

A proposal for reforming amateur examination processes

Ian Jackson VK3BUF

This document relates to the examination process for Amateur Radio operators. The need for change has been pressed upon the amateurs whether they want it or not. Simply making the minimal administrative changes to conform with new legislation would limit the uptake of the hobby to a straggling few and reinforce the downward spiral. To seize the initiative and establish a publicly accessible system is to spearhead a new era of amateur radio for all Australians. Let us not allow this opportunity to pass us by.

This article is a condensed version of a more complete proposal put forth by myself and others over several years. To request the full version contact: ianjackson@dcsi.net.au

The existing system:

The present system for Amateur examinations has not changed for many years. Interested persons must contact and apply to a certified coordinator within Club or Zone groups.

Conducted by volunteers, exams are usually staged at infrequent 1 to 2 month intervals. Add to this a 30 day (typical) delay while papers are being marked. (longer over Christmas). The ACA then takes 14-21 days to process a licence application.

Candidates must typically wait 56 to 100 days before they can get on air if they are successful. Unsuccessful candidates may have to repeat this cycle several times before all subjects are passed.

Notwithstanding the difficulty of the exam, the actual exam process is the biggest disincentive we have for people contemplating an Amateur Radio Licence.

A major change in the examination process is needed, and it should happen in conjunction with the other proposed licence changes presently being considered.

The proposal:

- We retain or expand our present list of examiners with the various clubs and divisions.
- An Internet site is established with a range of on-line exams for both theory and regulations. These would be real exams, but they can only be engaged and conducted by the authorised examiners.
- The examiners confirm all identities and help conduct the on-line exam. A Pass/Fail result would appear on the screen at the end of the exam.
- If they fail, the attempt is logged with the site and the candidate can try again at the examiner's convenience. The next day or week – whatever.
- If they pass, they select a vacant callsign and a temporary licence is printed. The candidate then leaves an ACA licence fee with the examiners and goes home with a valid callsign.
- The examiners forward the application to the WIA National office, who retain a fee, confirm all identities and forward applications to the ACA who send a formal certificate & licence to the candidate in the normal fashion. The ACA would almost certainly prefer to receive these licence applications as a block from a single source rather than intermittent correspondence they receive now from around the country.

With such a system the workload in the W.I.A National office is greatly reduced. This will make a big difference to the number of exams being held, for less workload. Even when candidates fail, they would know immediately, which would reduce stress and tension.

Over many years I have seen the process itself infuriate genuine would-be amateurs to the point that they have walked away from the hobby, never to return.

Combined NAOCP/ AOCP (Standard/ Advanced) examinations

The Novice and Full theory examinations have always been separate exams. This may have been appropriate in earlier days when novices had no access to advanced modes. With the inclusion of extra facilities for Novices has come an expansion of the syllabus. They are similar in content to the 'Full' exam and differ only in the degree of difficulty.

The existing Novice syllabus should be abandoned, as all of its content is already encompassed by the present AOCP syllabus. The NAOCP theory standard will soon become the new 'STANDARD' licensing option, and the existing AOCP or 'Full' licence will become the 'ADVANCED' licence.

Maintaining these two question banks as separate entities is unnecessary. Exam integrity could be preserved by allowing the STANDARD / ADVANCED candidates to sit the same exam. The result would be determined by the pass mark obtained on the day.

The views expressed in the *Opinion* and *Over to you* columns are those of the authors, and do not necessarily reflect the official policy of the Wireless Institute of Australia.

- A 70% or greater exam mark would result in a pass to the ADVANCED licence.
- A mark of (say) 50% to 70% would result in a pass to the STANDARD licence.

Candidates would no longer have to decide which licence level to initially apply for. This has been a real dilemma for people new to the hobby. Much time has been wasted by candidates who may well have been up to the Novice standard, have instead attempted the AOCP standard and have failed. The result is that they have nothing. They then may have to wait for several months before having to make the same decision yet again.

Foundation licence examinations

The new entry level or 'Foundation Licence' as it is now known, will be implemented in the near future. The standard chosen should resemble that of the European counterpart rather than creating another 'standard' from scratch. This will have important ramifications for CEPT equivalence between nations.

Persons wishing to gain a Foundation Licence would require a pass with a mostly multi-choice exam. Because it is largely operator oriented, this would best be different and more interactive than the STANDARD/ADVANCED examination. It would be strongly oriented towards setting up a successful amateur station in a 'safe' way with low interference potential.

The Foundation Licence exam should also be Internet (or CD Rom) based. It would require the candidate to complete several tasks, such as dragging pictures of transmitters, antenna tuners and test equipment into a 'work area' and correctly interconnecting the ingredients of filters and earthing requirements. Only when the candidate has completed all assigned tasks correctly within an allocated time frame would they be deemed to have 'passed'. Other questions would require a more general knowledge of basic RF and Electrical topics akin to that present in the UK Foundation Licence syllabus.

The exam question bank

With our present system we have a large question bank which forms the source of exam papers. This is a closed bank and candidates and educators alike have no access to it.

Over many years I have assisted many students through radio club based classes. I have seen first hand what motivates potential amateurs and I have seen what makes them walk away.

There are three important issues that must be addressed in conjunction with any proposed examination system:

1. Bank access

As the exam question bank is presently sealed, it is extremely difficult to give candidates a true view of what they will encounter in an exam situation. The degree of difficulty of many trial papers presently in circulation is greatly misleading, as are most old reference books. Numerous unreasonable questions have crept into the question bank and instructors, prohibited from viewing exam papers, have increased difficulty in preparing their students.

It is important that this information be made available to both students and instructors. This should not be seen as a quest to reduce technical competency, but as a valid educational aid.

2. Relevance of questions

I have often been asked about the relevance of questions encountered in exams, such as: "Why must amateur operators be examined on things like geo-stationary satellites and the rotational speed of the sun?" I have never been able to provide a reasonable answer to such questions.

It is not simply a question of standards or degree of difficulty. It is the appropriateness of empowering prospective amateurs with the essential skills and safety standards. At some point there must be acceptance that a new amateur need not know everything about everything, it should suffice that they know how to find out. (Compare the present syllabus size with one of 30-40 years ago!)

Educators who have no access to actual exam papers have no way of resolving the intent of many questions encountered by candidates. It is essential to candidates and educators alike that the question bank of any amateur exam be placed in the public domain.

3. Examination consistency

This is a slippery topic to address. In reality some exam papers are harder than others by a good 15 to 20% margin.

It is a condition that has both infuriated and alienated more prospective amateurs than any other.

After exam events I usually ask candidate groups how they have found their paper. There is always a consensus that a number of questions are 'easy' and some are 'hard' or 'tricky'. A bad paper is one that has a disproportionate number of 'hard' questions. Naturally this is a subjective response tied to the material most or least studied by the candidate, but beyond their knowledge is an arbitrary degree of difficulty that swings randomly with the chosen questions.

What can be done?

One strategy is to allow poor questions to be altered or removed from the question bank. (detailed below) This would minimise the silly and obscure questions that are habitually encountered.

A second approach affects the question bank more directly. Questions are presently held in categories so that exam papers have the right mix of topics. A relative degree of difficulty could be attributed to each question. If a small panel of people were to read and rate each question in 'degree of difficulty' on a simple 1 to 5 scale, an aggregate of that figure would be stored as a flag against each question. When the computer is called upon to generate an exam from the bank, it must continue to choose questions until the combined difficulty value falls between two predetermined thresholds.

This process sounds more difficult than it is, but it would be a simple function of programming within the exam database. Once implemented, it would go a long way in restoring confidence to potential candidates.

Regulations examinations

It should be possible to incorporate regulations questions within the theory exams. Regulations then become 15-20 questions embedded as another topic and would not then require a separate exam process. This is current practice with amateur exams conducted in the USA and seems to work well.

A forum for question bank changes

Presently it is difficult to challenge any exam question because the very people who train candidates and administer

examinations have no access to its content. While we must take care in maintaining exam integrity, we are collectively ignoring one of our best resources; our nationwide network of radio clubs.

A more consultative process is needed. A suggested way of achieving this is:

- W.I.A. affiliated radio clubs would have the option of putting forward an individual to be available in the nominal role of an Exam Content Consultant.
- Both Clubs and individuals could submit that an exam question is unfit or unreasonable. In doing so, they must offer an alternative wording for the suspect question. In the case of a question being deemed 'irrelevant', the alternative question may simply be a new question from the same general category.
- At intervals of approximately six months, suspect questions would be sent from the National office as a block (by Email) to the Exam Content Consultants who would simply accept or reject the alternative wording. A majority consensus would dictate whether the change is accepted or not.
- The revised questions would then be introduced to the question bank for immediate use.

Such a process would not be difficult to implement. Most clubs would enjoy the opportunity to contribute to a national effort. It would also be seen to be a consultative process.

About the author of this proposal

I have been a licensed operator since 1978. I have been a member of both the Gippsland Gate Radio & Electronics Club and of the W.I.A. throughout that time. I have been the instructor/coordinator of many formal Amateur Radio classes. Aged 43, I presently operate a small electronic engineering business in Drouin West, Victoria.

Amateur Radio
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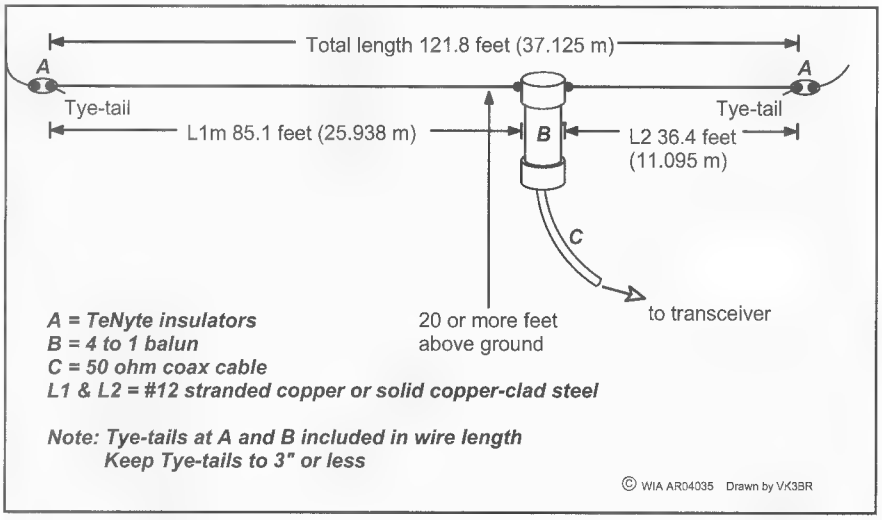
Try this

A Windom antenna

Chris Wright VK2UW

The attached drawing describes a variation on the well-known Windom antenna.

Operating CW and SSB on 80, 40, 20, 15 and 10 metres, I did not use an antenna tuner. On all but 15 metres the VSWR was better (less) than 2 to 1. On most bands, it was less than 1.5 to 1. On the CW portion of 10 metres, the VSWR was slightly above 2 to 1.


Total length 121.8 feet (37.125 m)
A
A
Tye-tail
Tye-tail
L1m 85.1 feet (25.938 m)
B
L2 36.4 feet
(11.095 m)
C
to transceiver
20 or more feet
above ground
A = TeNyte insulators
B = 4 to 1 balun
C = 50 ohm coax cable
L1 & L2 = #12 stranded copper or solid copper-clad steel
Note: Tye-tails at A and B included in wire length
Keep Tye-tails to 3" or less
© WIA AR04035 Drawn by VK3BR

600 Hz selective CW audio amplifier

Robert Milne VK7ZAL/AX2TAR

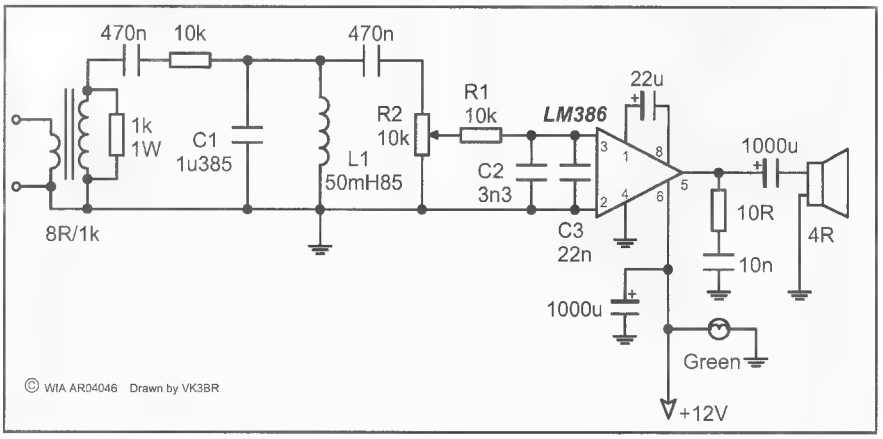
I have developed this amplifier with a bandwidth of 52 Hz at 600 Hz. It is capable of lifting CW out of the noise by over 10 dB. I use it when listening to CW signals on 181.4 kHz from New Zealand.

I resonate the antenna, amplify and apply the signal to my FRG100 receiver. This 600 Hz amplifier plugs into the phone jack of the receiver. On the LF band there is usually quite a lot of noise and this filter helps improve the signal to noise ratio.

The parallel tuned circuit of C1 and L1 must tune to the frequency of the tone of the CW coming out of the receiver, in my case 600 Hz. Some additional filtering is provided by R1, C2 and C3 forming an approximately 600 Hz low pass filter.

In my case, L1 consists of two layers of 0.5 mm diameter wire wound on a ferrite core 2.23 inches square and 0.5 inch thick. The inductance value is not critical as long as it resonates with C1 somewhere near 600 Hz. The core of L1 should also be such that the inductance doesn't drift.

The 8 ohm/1 kilohm transformer is a speaker transformer. The volume control R2, is a 10 kilohm potentiometer.



Gridsquare Standings at 24 December 2004

144 MHz Terrestrial

VK2FLR	Mike	111
VK3FMD	Charlie	103
VK2KU	Guy	102
VK2ZAB	Gordon	78 SSB
VK3KAI	Peter	77
VK2KU	Guy	69 SSB
VK3CY	Des	68
VK3PY	Chas	68 SSB
VK2DVZ	Ross	62 SSB
VK2TK	John	62
VK3EK	Rob	62 SSB
VK3HZ	David	62
VK3XLD	David	55 SSB
VK2EI	Neil	54
VK3TMP	Max	53
VK3ZLS	Les	51 SSB
VK3BDL	Mike	50
VK3BJM	Barry	50 SSB
VK2DXE	Alan	47
VK2KU	Guy	47 Digi
VK7MO	Rex	47
VK3KAI	Peter	46 SSB
VK3WRE	Ralph	46 SSB
VK2DXE	Alan	43 SSB
VK3CAT	Tony	39
VK3KEG	Trevor	39
VK4TZL	Glenn	38
VK2TK	John	35 SSB
VK4KZR	Rod	35
VK3KAI	Peter	33 Digi
VK3ZUX	Denis	33 SSB
VK6HK	Don	33
VK3ZYC	Jim	31
VK7MO	Rex	30 SSB
VK3KME	Chris	28 SSB
VK2KRR	Leigh	27 FM
VK2TK	John	27 Digi
VK4DFE	Chris	26 SSB
VK2TG	Bob	24 SSB
VK7MO	Rex	24 Digi
VK3YB	Phil	23
VK5ACY	Bill	23 SSB
VK2EAH	Andy	21
VK3HV	George	21 SSB
VK3TLW	Mark	20 SSB
VK6KZ	Wally	20
VK3BBB	Brian	19
VK3AL	Alan	18 SSB
VK6KZ/p	Wally	16
VK3ZYC	Jim	14 SSB
VK3DMW	Ken	13
VK2CZ	David	12
VK2EAH	Andy	12 SSB
VK7ZSJ	Steve	12
VK2EI	Neil	11 Digi
VK4CDI	Phil	11
VK2DXE/p	Alan	10
VK3ANP	David	10
VK3BG	Ed	10
VK2EAH	Andy	9 Digi
VK6HK	Don	6 Digi
VK2TWO	Andrew	5
VK3ZDR	David	5 SSB
VK2AKR	Neil	3 Digi
VK2DXE	Alan	3 Digi
VK4TJ	John	3 SSB
VK6DXI	Mirek	3 FM
VK2AKR	Neil	1 SSB
VK3XLD	David	1 Digi
VK4CDI	Phil	1 Digi

144 MHz EME

VK2FLR	Mike	110
VK2KU	Guy	89
VK7MO	Rex	87 Digi
VK3CY	Des	70
VK2KRR	Leigh	24
VK3HZ	David	4
VK3KEG	Trevor	4
VK3FMD	Charlie	3
VK2DVZ	Ross	2
VK2DXE	Alan	2
VK4CDI	Phil	1

432 MHz Terrestrial

VK2ZAB	Gordon	57 SSB
VK3PY	Chas	50 SSB
VK3FMD	Charlie	47
VK3XLD	David	47 SSB
VK3ZLS	Les	40 SSB
VK2KU	Guy	38
VK2KU	Guy	34 SSB
VK3EK	Rob	34 SSB
VK3HZ	David	33
VK3CY	Des	32
VK2DVZ	Ross	31 SSB
VK3BJM	Barry	30 SSB
VK3KAI	Peter	28
VK3KAI	Peter	27 SSB
VK3BDL	Mike	26
VK3WRE	Ralph	26 SSB
VK3TMP	Max	25
VK3KEG	Trevor	21
VK2TK	John	18
VK2TK	John	17 SSB
VK7MO	Rex	17
VK3ZUX	Denis	15 SSB
VK3CAT	Tony	14
VK4KZR	Rod	14
VK3TLW	Mark	13 SSB
VK6KZ	Wally	13
VK2KRR	Leigh	11 FM
VK4TZL	Glenn	11
VK3AL	Alan	10 SSB
VK3ANP	David	10
VK3BG	Ed	10 SSB
VK3YB	Phil	10
VK2TG	Bob	9 SSB
VK4DFE	Chris	9 SSB
VK3KME	Chris	8 SSB
VK6KZ/p	Wally	8
VK3BBB	Brian	7
VK2FLR	Mike	6
VK4CDI	Phil	6
VK7MO	Rex	6 Digi
VK2KU	Guy	5 Digi
VK3HV	George	5 SSB
VK3KAI	Peter	4 Digi
VK3PY	Chas	4 Digi
VK3XLD	David	4 Digi
VK3ZYC	Jim	4 SSB
VK2CZ	David	3
VK2TWO	Andrew	3
VK6DXI	Mirek	3
VK2DXE/p	Alan	2
VK4TJ	John	2 SSB
VK2AKR	Neil	1 SSB
VK2TK	John	1 Digi
VK3DMW	Ken	1

432 MHz EME

VK4KAZ	Allan	14 CW
VK3FMD	Charlie	5
VK3HZ	David	1
VK7MO	Rex	1

1296 MHz

VK3XLD	David	35 SSB
VK3PY	Chas	34 SSB
VK3FMD	Charlie	32
VK2ZAB	Gordon	29 SSB
VK3ZLS	Les	26 SSB
VK2KU	Guy	25
VK2KU	Guy	22 SSB
VK3EK	Rob	20 SSB
VK3KWA	John	19
VK2DVZ	Ross	16 SSB
VK3KAI	Peter	16
VK3WRE	Ralph	16 SSB
VK3KAI	Peter	15 SSB
VK3BDL	Mike	12
VK3BJM	Barry	12 SSB
VK3TMP	Max	11
VK2TK	John	10 SSB
VK4KZR	Rod	10
VK7MO	Rex	10
VK3HZ	David	9
VK3TLW	Mark	8 SSB
VK3AL	Alan	7 SSB
VK2CZ	David	5
VK3HV	George	5 SSB
VK3ZUX	Denis	5 SSB
VK3ZYC	Jim	5
VK6KZ/p	Wally	5
VK3BG	Ed	4 SSB
VK3BVP	Shane	4
VK3YB	Phil	4
VK3ZYC	Jim	4 SSB
VK6KZ	Wally	4
VK2KU	Guy	3 Digi
VK3BBB	Brian	3
VK3KEG	Trevor	3
VK2DXE/p	Alan	2
VK2FLR	Mike	2
VK3CY	Des	2
VK3KAI	Peter	2 Digi
VK3KME	Chris	2 SSB
VK3XLD	David	2 Digi
VK4TJ	John	2 SSB
VK6DXI	Mirek	2
VK3DMW	Ken	1
VK3ZYC	Jim	1 Digi
VK4TZL	Glenn	1
VK7MO	Rex	1 Digi

2.4 GHz

VK3PY	Chas	11 SSB
VK3XLD	David	11 SSB
VK3WRE	Ralph	9 SSB
VK3FMD	Charlie	8
VK3KAI	Peter	7 SSB
VK3EK	Rob	5 SSB
VK3HV	George	4 SSB
VK6KZ	Wally	4
VK3BJM	Barry	3 SSB
VK3KAI	Peter	2 Digi
VK4KZR	Rod	2
VK3BG	Ed	1 SSB
VK3TLW	Mark	1 SSB
VK3ZUX	Denis	1 SSB
VK4TZL	Glenn	1

3.4 GHz

VK3FMD	Charlie	8
VK3WRE	Ralph	6 SSB
VK3KAI	Peter	5 SSB
VK3HV	George	4 SSB
VK3XLD	David	4 SSB
VK6KZ	Wally	4
VK3EK	Rob	3 SSB

5.7 GHz

VK3FMD	Charlie	10
VK3WRE	Ralph	9 SSB
VK3KAI	Peter	7 SSB
VK3XLD	David	5 SSB
VK6KZ	Wally	4
VK3BJM	Barry	2 SSB
VK3EK	Rob	2
VK3HV	George	2 SSB
VK6BHT	Neil	2 SSB
VK3KAI	Peter	1 Digi
VK3ZUX	Denis	1 SSB

10 GHz

VK3FMD	Charlie	9
VK6BHT	Neil	9 SSB
VK3WRE	Ralph	8 SSB
VK3XLD	David	8 SSB
VK3KAI	Peter	7 SSB
VK3EK	Rob	5 SSB
VK6KZ	Wally	5
VK3HV	George	4 SSB
VK3PY	Chas	3 SSB
VK3TLW	Mark	3 SSB
VK3ZYC	Jim	3 SSB
VK2EI	Neil	2 SSB
VK3BJM	Barry	2 SSB
VK3ZUX	Denis	2 SSB
VK7MO	Rex	2
VK3BG	Ed	1 SSB
VK4KZR	Rod	1
VK4TZL	Glenn	1

24 GHz

VK6BHT	Neil	3 SSB
VK2EI	Neil	2 SSB
VK6KZ	Wally	2
VK3FMD	Charlie	1

474 THz

VK7MO	Rex	1

Additions, updates and requests for the guidelines to Guy VK2KU, vk2ku@tsn.cc, or by mail (QTHR 2005).
The guidelines (and the latest League Table) are also available on the website of the NSW VHF Dx Group at www.vhfdx.radiocorner.net - click on Gridsquares.
Next update of this table will be in mid March 2005.
Stations who do not confirm their status for more than 12 months may be dropped from the table.

Over to you

AR Article by Michael Owen

Dear Michael,

I have just read your article in AR about the proposed revision of the examination system.

I wholeheartedly support the ideas set out. I particularly like, the facility to give exam candidates an indication of their success or failure at completion of the exam or soon afterwards. Most importantly, for those who may not have passed, an indication of where they need to improve their knowledge or skill.

From my own experience a few years back, I know how nerve wracking it is waiting for up to six weeks to find out.

I passed my Novice Theory and 5 words Morse first go. If I had not, I would have wanted to get straight onto more study of the areas that I had missed out on.

For my Intermediate Licence, I was never sure which areas of the Advanced Theory I had done well in and which I had not.

The idea of accredited Assessors is a good one. It is consistent with Nation Competency based training and assessment in the workplace.

No system is perfect. It does seem logical however, to take advantage of the large amount of work already put into this area. I refer to changes made to workplace and educational training and assessment standards.

There are a number of Amateurs who act as invigilators and educators for Amateur Radio who are already qualified as teachers, lecturers or specialists in their field of knowledge. It would be counterproductive not to make use of their skill, experience and motivation to further the Amateur Radio Hobby and service.

I hope that what you have proposed is accepted. It would in my view improve the way the examinations are conducted. I believe that it would also encourage unsuccessful candidates to brush up on weak areas of knowledge and attempt the exam again.

The current system can be very discouraging to unsuccessful candidates. We did not all find it easy, especially those of us who do not have a work background in electronics.

Greg Arrell VK2KGA

More than 15 mins

Your correspondent VK6PF Fred Parsonage is entitled to his opinion but I could not let his letter in the November 2004 issue of 'Amateur Radio' go unchallenged.

This is a problem of today's negativity; this is not right! that is not right! I suggest to the writer that he SHOULD read all the articles and not be a "15 minute flip through wonder". He might just learn something. I am surprised that Fred took only 15 minutes reading to cover the articles he mentioned, not a lot of depth? If the authors make the time and effort to research, develop and write articles it is up to us all to make the time and effort to read them. As a general policy I read all articles in AR, sometimes the title might look uninteresting but I have been fooled many times and have found the article of value. I have learnt something from each one of them, be it a different slant, point of view or result. This in itself makes it interesting and worthwhile

I have had a technical problem which I have had unresolved for over two years in spite of reading and research. This problem was resolved by a recent article of Drew Diamond's. If I had taken VK6PF's attitude the problem would still be, in all probability, unresolved.

Fred, how about contributing an article to AR instead of moaning.

You can be assured that it will be read by at least one person, Is that worth the effort?

Dave Rosan ZL1AFQ
Mairangi Bay, Auckland.

The views expressed in the *Over to you* column are those of the authors, and do not necessarily reflect the official policy of the Wireless Institute of Australia.

Silent key

David Robert "Dave" Gibbons VK1GD

It is with deep regret and sadness that we record the passing of David Robert Gibbons on 29 July 2004, just one day after his 78th birthday. Dave as he preferred to be known amongst the amateur fraternity, was UK born and served with the British Military Forces in Royal Signals Corps in such places as India and Japan.

He is best known for his experimentation both in his employment at the ANU and as an amateur radio operator, in the latter, trying to fathom the mysteries of antennas and propagation; he spent considerable effort attempting to understand EH and Cross Polarization radiators.

Dave had an extreme depth of knowledge in the fields of physics and electronics and in particular associated instrumentation. He is fondly remembered by amateurs in VK1 as an eagerly helpful and generous peer, especially to the many novices that eventually graduated to full call status, after upgrading during the 70's from VK1NDG to VK1GD.

Some of his on-air involvements were 10-10 participation, JOTA and net participation. He was recently net controller of the Royal Signals net. Dave suffered a major loss on 12 July 2004 when his wife Reiko passed away and at the time contracted a severe case of pneumonia, which he eventually succumbed to. He is fondly remembered and sadly missed by his daughters and sons-in-laws Melanie and Rodney, Beryl and Ray, Estelle and Dennis, Heather and Scott and his great grandchildren and grandchildren. Vale "Dave" Gibbons VKIGD.

Submitted by John Clare VKICJ.

Antennas:

Some useful wire antennas for HF

Part 3

Rob S Gurr VK5RG concludes his series on wire antennas.

Quarter wave sloper

This must be the cheapest effective and useful antenna available. In the simplest form it may be considered a quarter wave vertical, but fed at the top instead of the bottom. The "ground plane" is the support tower and the mass of the other beams and antennas mounted on the tower. I have fabricated a mast clamp that enables me to secure it to the top of a tower, and from this clamp have run a quarter wave wire to a nearby pole or tree. A coaxial cable socket is available to connect the feedline. Tuning is by altering the length of the wire a few inches either way, as guided by an SWR reading, or noise bridge.

The initial SWR should be quite low; however, it may be improved by moving the bottom of the wire from place to place in the yard. Best SWR may sometimes be time consuming to achieve, but it will be worth it. The antenna has a low angle of radiation and on 7 MHz has provided me with USA contacts that have not been possible on a centre fed dipole. If you have a tower and a spare coax running to its top, this is a "Bonus" antenna.

Full wave loop

The use of a full wave horizontal loop at a very low height has become popular throughout the world in recent years. Erection of a large multiband array in a moderate size suburban backyard has been the wish of many hams. Although not large, the full wave loop has a great deal to offer.

In its general configuration, a full wave of wire is suspended (as a square of equal sides) at between three and ten metres above the ground. One corner, or the centre of one side, is fed with open wire line and the array matched at whichever frequency is desired. The radiation is predominantly through the plane of the antenna and, therefore, is directly vertical to the ionosphere. This is of great assistance, as reflected power is toward the ground and may spread over up to 1,000 km.

There is a need to consider some aspects of the ionosphere to understand the working of such an antenna:

1. The ionosphere surface is not a clear reflecting plane as is a glass mirror. It is a most uneven surface, with sections so irregular in shape that reflections may occur at many angles, hence the resultant broad geographic coverage (both on long distance hops or local vertical incidence paths as in this case).
2. There is a frequency above which the radio wave is absorbed by this surface, varying from time to time, season to season, known as the critical frequency.

The overall benefits of such an antenna are, therefore, good low frequency coverage over a local path and at no great expense of supports. Above the critical frequency, at perhaps 14 MHz, random lobes from the horizontal wires, which may have a reasonably low angle of radiation, can give acceptable DX performance.

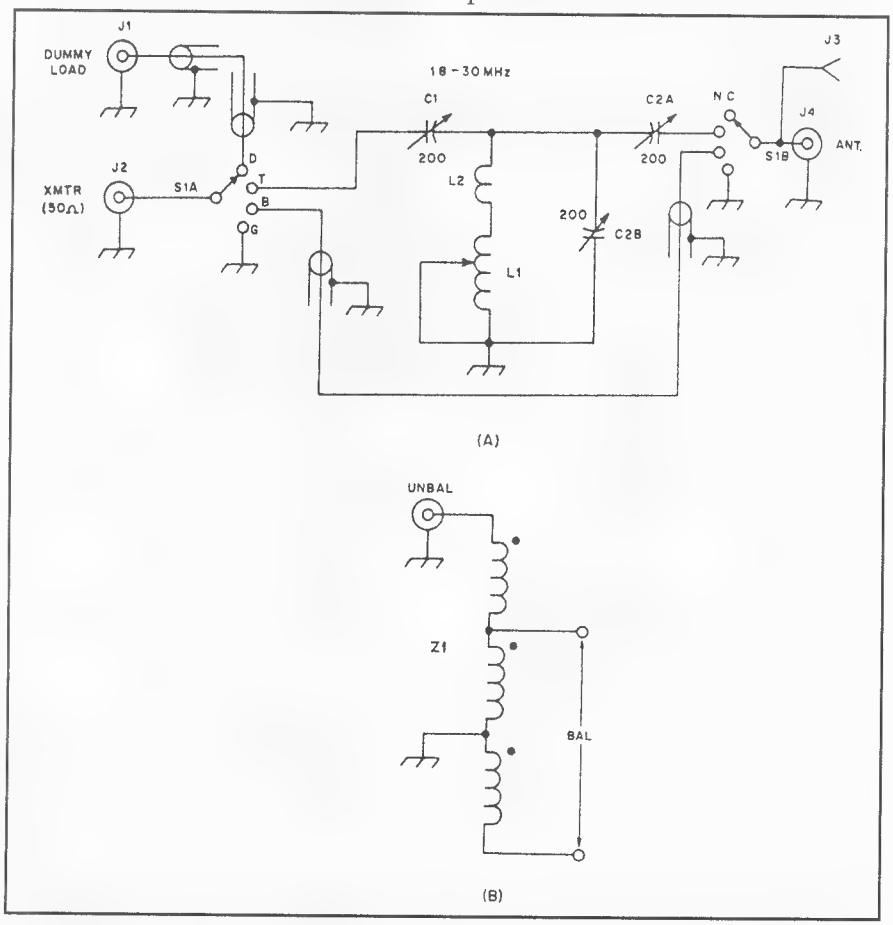


Figure 23 - Schematic diagram of the SPC transmatch. Capacitance is in picofarads. *(Reprinted from the* ARRL Handbook*, 1988 Edition, page 34-16)*

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A number of such low antennas may be used for multiband work. I mention them mainly in the context of their low frequency usefulness. A typical antenna may be erected as a 10 metre-a-side loop on three metre high masts, or on short poles protruding from the top of fruit trees, and give a 7 MHz signal into a nearby state comparable to a full size dipole at 15 metres used by another ham for DX work. The principle here is never to consider your back yard too small to erect an antenna, which will be effective in some way or other! The point at which such a loop is fed is more a matter of convenience than an electrical requirement, although the need to retain symmetry should be observed. I have seen some fed with coaxial cable via a balun; however, the practicality of using it on a number of bands makes the use of open wire line very attractive.

Alternative forms

I have encountered many of these antennas with a terminating resistor opposite the feedline point, as well as some with an open circuit at this point. These may provide some with an experiment or two to work out the worth of such modifications.

Antenna tuning unit

Coupling the feedline of the antenna to a transmitter is arranged through an antenna tuning unit (ATU). This item may be treated as a "black box" that matches the impedance found at the end of our feedline, on the various bands, to the 50 ohm load impedance of our transceivers. The feedline lengths may be chosen to arrange for either a current or voltage node to be present at the ATU terminals, where either a series or parallel resonant tuned circuit would simplify the adjustments.

Modern tuning units of the "SPC" (Fig 23) or "Z Match" (Fig 24) designs are more tolerant to complex impedances and it is not necessary to use "resonant" feedline lengths with these. The components within these ATUs are altered, by the adjustment of the controls, for a reverse power between the transmitter and the ATU of zero. This completes the matching process.

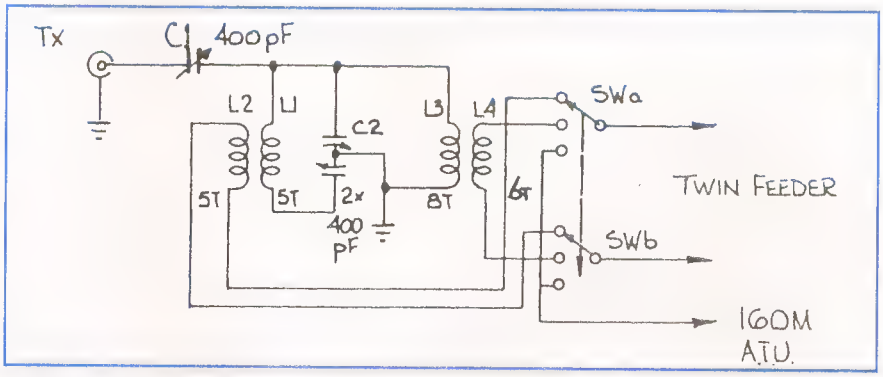

Figure 24 - The Z Match.
(Reprinted from Amateur Radio, *September 1984, page 17)*

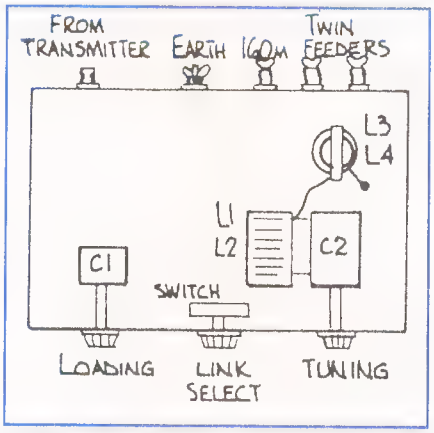

Figure 25 - The Z Match layout.
(Reprinted from Amateur Radio, *September 1984, page 17)*

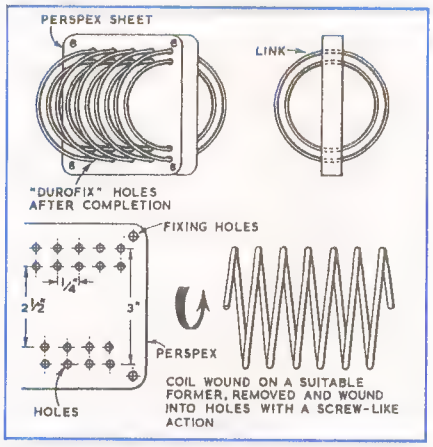

Figure 26 - Coil construction for the Z Match.
(Reprinted from the RSGB Amateur Radio Handbook, *3rd edition, page 369)*

Z Match antenna tuning unit

The Z match antenna coupling unit has been very popular for a number of years since it was featured in ARRL and RSGB publications, and more recently in Amateur Radio magazine. Many units have been described using an assortment of coil dimensions and layouts, including single and two coil set ups, and units to cover from 1.8 to 30 MHz.

I have had success with the RSGB version (Fig 24), which covers 3.5 to 30 MHz only, and have now successfully built a number of these. My modified version has been copied by several VKs, and while the RSGB description gives excellent information on coil construction, the suggested layout gives extremely long leads to the 14-30 MHz range coil, which is overcome in the modified version (Fig 25).

This layout places the higher frequency coil directly between the fixed terminal lugs on the two gang (H gang!) capacitor. On both the RSGB and ARRL circuits, each link is marked for 3.5/7 or 14/21/28 MHz, which has caused difficulties for many constructors, as some feedline lengths present impedances to the coupler which may be matched better by the alternative connection. I solved this problem by using a 3-position, 2-pole switch that allows the twin feeder to be connected to either link (positions 1 and 2) or to the external terminal mounted on the rear panel of the coupler (position 3). This last terminal allows the twin feeder to be used as a top-loaded vertical antenna on 1.8 MHz through an additional antenna coupler, or as a general coverage receiving antenna.

The coils may be 63 mm and 75 mm in diameter, as shown in the diagrams, and 14 to 16 SWG wire is suitable. The coils should first be wound around a cylindrical former (eg an electrolytic capacitor) of smaller diameter, and then threaded into the holes in the perspex support. A suitable adhesive (eg plastic cement) may be used to fix the coils in the holes (Fig 26).

For power up to 100 watts, standard single- and two-gang broadcast receiver tuning capacitors are quite suitable, with Stromberg "H" gangs preferred. For higher power, a pair of transmitting variable capacitors, with adequate plate spacing, should be used. Note that C1 needs to be insulated from ground and from the COUPLING control knob. The frame and rotor of C1 should be connected to the transmitter output, while the stationary plates should be connected to L1.

A most essential requirement is the use of vernier dials on the drive shafts of the two capacitors. It is impossible to tune capacitors of these maximum values with the fine accuracy needed to set the match correctly, without such dials.

The "Z" match is constructed on a simple U-shaped chassis, with a second U-shape of perforated metal as a top cover. The front panel controls are LOADING, LINK SELECTION and TUNING.

The unit should be used with a good earthing system. A minimum 1.5 m length of 20 mm galvanised water pipe should be driven into the ground

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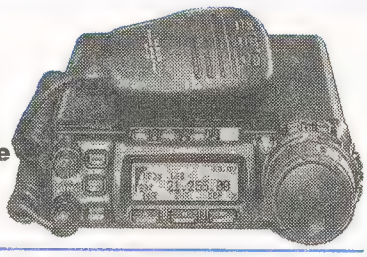

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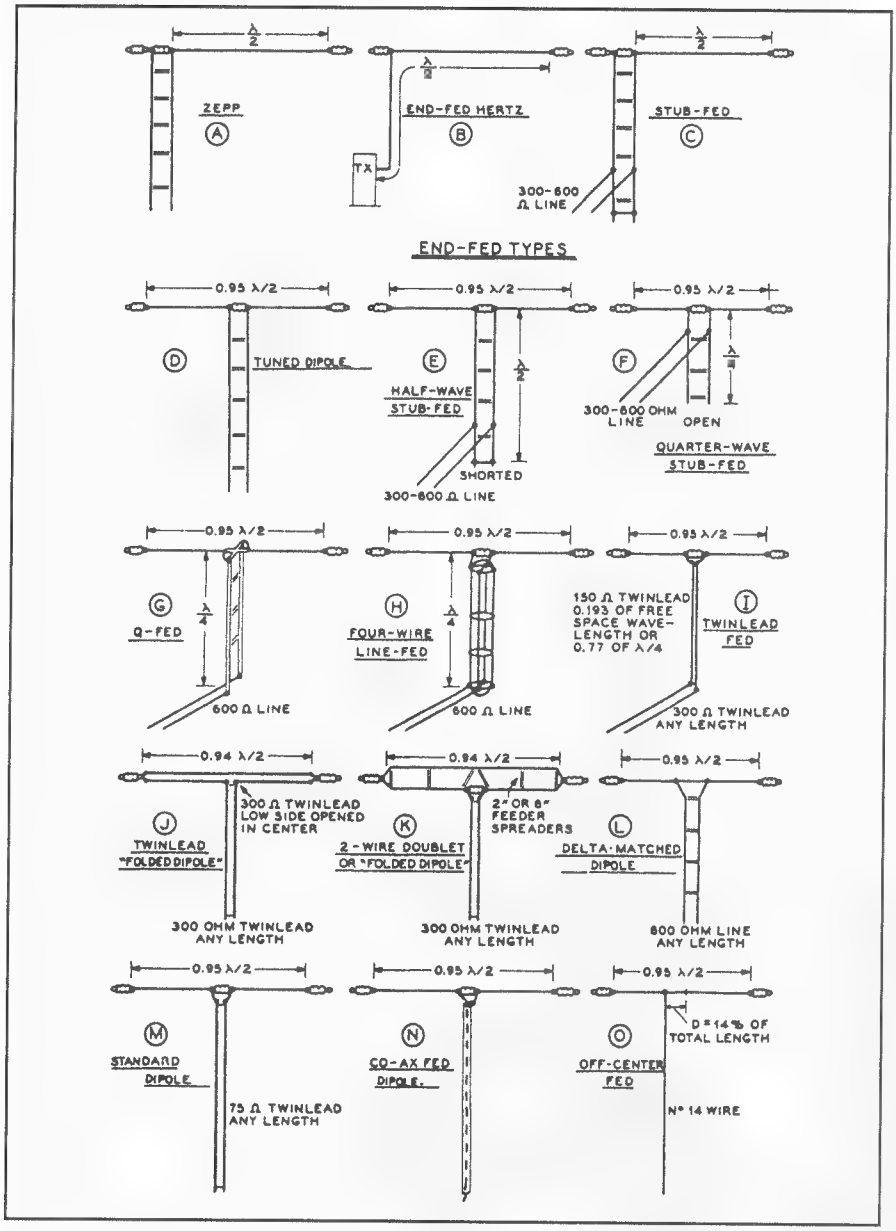


Figure 27 - Feed systems for a half-wave dipole antenna.

immediately behind the antenna coupler and, from an earth clamp on this pipe, a length of 6 mm or larger copper wire run to the earth terminal on the ATU. One to two metres of wire should be enough. Additionally, bonding of this earth system to nearby water pipes, galvanised steel carports or other metallic structures will improve efficiency when using unbalanced-feed antennas.

Although the Z match will normally be used with balanced lines, I have frequently used it to couple to coaxial cable, and have a standard connector mounted on the rear panel, adjacent to the balanced terminals and suitably insulated from the panel. A small switch or jumper clip may be used to earth the outer of the coaxial socket to the chassis, should this be necessary.

Dipoles

In Fig 27 I have presented 15 ways of feeding a half wave dipole - there are surely more! Few of these may be used with multiband wire antennas; however, all give a great basis for further experimentation with antennas.

It may come as a surprise to a large proportion of readers that there are so many possible methods. I offer them as a starting point for your next antenna matching experiments.

Conclusion

I have presented some useful antennas in this article. Some basic details have been supplied and a few hints given on methods of construction. No paper on this very broad subject can be complete in all details; however, I refer you to the list of publications to read, and conduct experiments with some of my comments in mind.

I am sure you will have plenty of fun, learn a lot about antenna theory, and obtain plenty of contacts with all parts of the world. I cannot help solve the current high frequency propagation problems.

However, with a suitable antenna, you should have good contacts when the various bands are open.

Further reading on high frequency wire antennas

'Wire Antennas'; Rob Gurr VK5RG, *Amateur Radio* September 1984.

'Broadband High Frequency Antennas'; Rob Gurr VK5RG, *Amateur Radio* January, 1988

'High Frequency Dipole Antennas'; Joe Carr K4IPV, *Ham Radio* June, 1989 (p12).

'Non-resonant Delta and V Beam Antennas'; Robert Wilson KL7ISA, *Ham Radio* May, 1990.

'High Frequency Directive Arrays'; William Orr W6SAI, *Radio Handbook* 20th Ed, Ch 24 to 29.

'Multiband Antennas'; Chip Angle N6CA and others, The *ARRL Antenna Book* 15th Edition.

'Antenna Projects': John Bloom KE3Z and others, *The ARRL Handbook* 1985, Ch 33. *Novice Antenna Handbook;* Doug DeMaw W1FB, *ARRL* 1988.

'W1FB's Antenna Notebook'; Doug DeMaw W1FB, *ARRL* 1987

'ZL Special 2 m Beam'; Fred Judd G2BCX, *Out of Thin Air Practical Wireless.*

'Horizontal "Zeppelin" Antenna'; page R 38, *Handbook of Wireless Telegraphy*, 1938 (Admiralty).

ARRL Antenna Compendium Vol 1, 1985 Edition.

ARRL Antenna Compendium Vol 2, 1989 Edition.

ARRL Antenna Compendium Vol 3, 1992 Edition.

'Low Band DXing'; John Devoidre ON4UN, *ARRL* 1987.

'Antenna Anthology'; ARRL 1978.

'Practical Wire Antennas'; John D Heys G3BDQ, *RSGB* 1989.

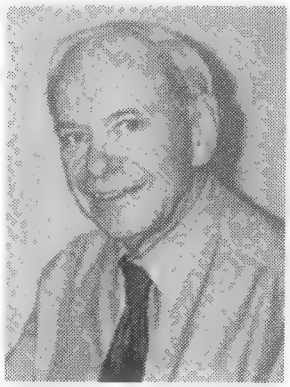
Acknowledgments

The author acknowledges some drawings and diagrams copied from the following publications: *Radio Handbook, Amateur Radio, ARRL Publications, RSGB Publications,* and *Ham Radio.*

Rob S Gurr VK5RG

35 Grandview Avenue, Urrbrae, SA 5064

Peter Naish VK2BPN



On Sunday 9 January 2005 Peter Naish VK2BPN, passed away in St Vincent's Hospital, Sydney. He had suffered a heart attack the previous Thursday.

Peter was born in England in 1931, and graduated from University College London in 1952 as a Batchelor of Electrical Engineering.

From 1952 until 1967 Peter worked for Marconi, initially to install, commission and maintain television transmitters in various countries, including Australia, later to design TV transmitters, particularly high power UHF transmitters, and later high power satellite earth stations.

Peter finally settled in Australia after many visits, starting around 1952.

Between 1967 and his retirement in 2001, Peter was employed by STC Australia, later Alcatel Australia, initially as an engineer, later as a Marketing Manager then as a Product Manager and then working as Project Manager for projects ranging from telephone exchange contracts to microwave link projects.

Peter was first licensed as G3EIX, then as VK2BPN.

Peter has held various positions in amateur radio.

Peter became Federal Secretary of the WIA in August 1995, a position that he held apart from a brief period until his death. In addition he was Federal President from March 1998 until April 2001.

At the time of his death Peter was Secretary of the WIA, continuing the role he held in the previous Federal Structure. Peter enthusiastically supported the restructure of the WIA to a single national body.

Just as importantly, Peter was elected a Director of IARU Region 3 at the Darwin Conference in 2000, and was appointed Chairman of the Directors at the Region 3 Conference, in Taipai, Taiwan in February 2004.

Peter married Monica in September 1961 and had two daughters, both engineers, one an amateur with the callsign VK2KFN. He had 4 grandchildren.

Despite his great contribution in such positions, Peter was above all a true amateur. He was a member of the First Class Operators Club (FOC). Membership of FOC is reserved for those who can display exemplary CW operating skills and is by invitation only. At any one time there are only 500 members worldwide.

At a moving funeral service at St Kevin's Catholic Church, Eastwood, on Friday, 14 January 2005, IARU Region 1 and Region 3 were represented, and very many of his friends from amateur radio and the WIA were present.

Tributes had flowed in from many national radio societies, as well as from his many friends in so many countries.

The loss of Peter is a great loss to amateur radio. It is a great loss to the amateur radio organisations he supported, including the WIA. But above all, Peter was a true gentleman and a true amateur. His passing is a loss to all of us.

Michael Owen VK3KI, Barry White VK2AAB, Chris Jones VK2ZDD

Greetings from the Cook Islands

Royal Cook Island Radio Club conducts amateur radio courses and exams, to the same syllabus as the New Zealand amateur radio requirements.

High school students have an open invitation to visit our club, to operate or observe, and we show them how amateur radio contributes to their safety during hurricane season.

We encourage them to monitor the VHF FM Marine frequencies, listen to their family and friends out fishing and explain the similarity between those frequencies and 2 metre amateur.

Two local candidates have recently gained their unrestricted licences.

For many years Stuart Kingan ZK1AA (Now a silent key) ran the Satellite Peacesat Station and maintained HF links to the outer Cook Islands. The Cook Island Government even buried the power cables past Stuart's waterfront property at Matavera, Rarotonga so as to make sure his station ZK1AA had no electrical interference.

ZK1JD Jim Ditchburn coordinates most of the Boys Brigade/Scouts and Girl Guide Activities. He opens his station for use in October's JOTA activity.

Victor Rivera ZK1CG/ZK1USA is the islands' most active DXer. He also takes groups to the outer Cook Islands (North Cook) and they go up by boat, to places like Manahiki and Penryn.

We are associated with SATERN (Salvation Army Team Emergency Radio Network). Regular SATERN skeds are kept to practice handling traffic and to ensure our equipment is maintained properly.

We keep regular skeds with the Inter Island Net on 14.314.00 MHz at 0700 UTC and SEANET 14.320.00 MHz at 1200 hrs UTC.

ZK1DD Des Clarke, a resident on Aitutaki, has regular skeds on Monday-Wednesday & Friday on 14.131.00 MHz USB at 0400 UTC and talks with Dick Best 3D2BA in Sigatoka, Fiji.

Sadly, Tuatia Topou ZK1MA, the only resident ham on Manahiki Atoll, in the Northern Cook Islands, is now a silent key. Tuatia ran the local general store and had an excellent fist for CW.

We are interested in seeing what the Australian Foundation Licence comprises.

Any visiting WIA member is welcome to use our club station whilst here. We will provide advice and assistance, in advance, if needed to assist visiting hams obtain a licence and ZK call sign.

Are Ra, Kia Manuia!

James GOODGER ZK1DG
Royal Cook Island Amateur Radio Club.
pukapan@yahoo.com

ALARA

Christine Taylor VK5CTY

The new year

Around the rim of the Indian Ocean it has been a very grim end to 2004 and start to 2005, but we are proud to know that amateurs on the spot and around the world are busy handling emergency traffic in places where there are no phone lines and where even mobile phones are unable to operate.

In the Andaman Islands, at Port Blair, it was a YL, Bharti VU4RBI, who, as leader of the Dxpedition to the Andaman and Nicobar Island, first made contact with the world after the tsunami hit on Dec 26th. The group were the first ham operators allowed to operate in those islands for 17 years, but they gave up the DX opportunity to provide a link to the authorities and to the news services.

There had been 'a total failure of all governmental communications' from that region until the hams of this expedition started operating, as reported in the evening news programs in India.

Elsewhere, in Sri Lanka, for example, ham operators were actually asked by the Prime Minister to set up a station inside his house to provide essential contact to the outside world and with outlying parts of the country.

I am sure, like me and all members of ALARA, you are proud to be part of a group who rise to the occasion in all times of emergency.

Please keep a listening watch and assist wherever possible.

The contest

The results of the ALARA Contest were published in the December issue of AR, but as there were some old and new names on the results list, some congratulations are in order.

To Gwen, again a worthy winner. To achieve such a high score Gwen VK3DYL works hard right through the contest. She is grateful for the support of her local club members and to her friends around the world for their assistance. No one can get a high score without having someone with whom to make a contact, and to make repeated contacts.

VK5 had a new winner in Shirley VK5JSH, and there were several new stations which submitted logs this time.

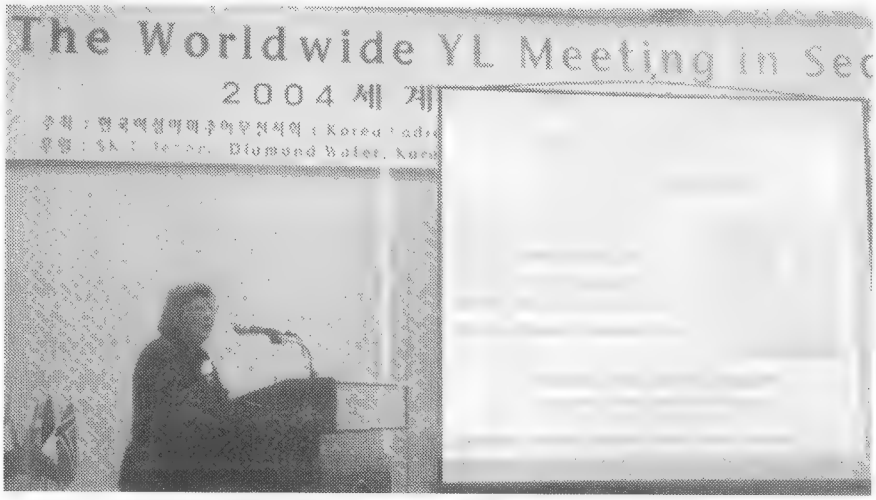
Thanks to everyone who contested. Please be there again this coming year.

The International YL Meet in Seoul

As can be seen from the following report, the whole Meet was very successful if full of surprises.

One of the photographs shows Gwen VK3DYL making a PowerPoint presentation at the Meet, about her DXpeditions. It was very well received – as it was the first PowerPoint attempt by Gwen, she deserves congratulations both for the actual presentation and for improving her computer skills.

Incidentally, with reference to those DXpeditions, Gwen has sent out over 10,000 QSL cards and is gathering more by the tens and scores all the time... Keep her busy please!!!



Gwen VK3DYL giving her PowerPoint presentation

Gwen's report on the Seoul MEET

"Early in October the Capital Hotel in Seoul resounded with cries of joy as YLs from around the world met up with their friends and checked in for the 7th International YL Meeting. 195 YLs and OMs from 14 different countries attended this Meet in "The Land of the Morning Calm", South Korea. I counted 13 ALARA members present - June/VK4SJ, Maria/VK5BMT, Carol/WD8DQG, Truus/VE3MRS, Ruth/IT9ESZ, Unni/LA6RHA, Raija/SM0HNV, Sarla/VU2SWS, Walli/DJ6US, Mio/JR3MVF, Ayako/JR1VTY, Evelyne/F5RPB and myself Gwen/VK3DYL.

Our welcome started at Incheon Airport with a banner held aloft by some of our hosts so we'd know who to look for, and that was followed by a big surprise as we drove down the multi-lane highway towards our hotel – as we came to the toll-bridge across the road, there was another bigger banner, in lights this time, again welcoming us. In fact, everywhere we went there were banners, even on the side of our sight-seeing buses, proclaiming to all and sundry that the YLs of the world were gathered in Seoul for a get-together.

The HL Committee, under the Chairmanship of Chae, Do Sook, HL2KDW, had arranged a programme to enable us to see as much as possible of the country's culture and history plus some "get together" time at presentations and dinners. During the Meet itself and the 2 optional tours following it, we saw temples, Buddhas, museums, a

magnificent bonsai garden, a Korean Folk Village, etc. The local Radio Club happened to be holding their monthly Flea Market and invited us to pop in so the members could meet us – the pre-loved goods for sale looked very familiar – hi!

We toured SK Telecom and the Ubiquitous Dream Hall where one can easily see the shape of digital life in the future – from digital homes to offices, schools, cars etc. – the world's first virtual display of a futuristic lifestyle. I would have liked to bring home one of their "Intelligent Robots" – it might have given me more time to play radio.

Another tour was to the DMZ (Demilitarized Zone) – the border between North and South Korea. And, no, we weren't allowed to sneak across and call CQ de P5!

We were taken to two typical Korean performances – one set in an old-time Korean kitchen where the 4 performers banged with chopsticks on various kitchen utensils to produce some very loud music (?), whilst the other was held in a traditional Korean house where a group of Korean dancing girls performed a series of intricate traditional dances and drum playing.

Back at our Hotel, we had a few presentation slide shows, one of which I gave on "YL DXpeditions Down Under". The final night of the Meet saw each country put on some sort of an act with Maria, VK5BMT, gamely getting up and singing Waltzing Matilda on Australia's behalf while everyone else present roared out the choruses – not always in English! Joining in a conga line became very popular between acts, and one was never sure whether one was coming or going. But it was fun and very noisy. But the noise and singing was nothing to that experienced on the night before the survivors left for home. Luckily the café belonged to a friend of Chae, so we all sang, Karaoke style, till the roof just about lifted off.

In between all this we visited a couple of street markets, with the end result that some of us had to buy an extra suitcase to bring all the goodies home. Korea is a shopper's paradise!

I was sorry I didn't have time to operate the special radio station set up in the hotel – DT04YL – but we were just so busy! My other memories of South Korea are – the cleanliness of the streets; the horrific lanes of traffic on the motorways; the skill of the local drivers when they wanted to go from the right-hand lane across 4 or 5 other lanes to get into the far left lane (no way Jose, would I drive there!!); the friendliness of the people, even at the street market stalls when one refused their urgings to buy; the day spent on Jeju Island; the busloads of school children on excursions to visit cultural sites, and last but not least the spicy food cooked at the table with never a bit of bread in sight!

Sarla, VU2SWS, made the offer to host the next, 8th, International YL Meet, so the farewell cry as people left for the airport was "See you in Bombay in 2 years' time". Here's hoping!

de Gwen, VK3DYL "

VK YLs in Seoul - Gwen VK3DYL, June VK4SJ and Maria VK5BMT

The QSL Buro at the Flea market

Don't forget the ALARAMEET over that September weekend

Applications are coming in but there is room for more, for the weekend of September 9th/10th and 11th. We hope some of the early YLs in ALARA will have made contact by then too, so that we can know how they are and what they are doing now. Maybe one or two of you will decide to join us. That would be marvellous. Just contact Marilyn VK3DMS QTHR or go to our website, www.alara.org.au for more information.

We expect there to be some overseas visitors as well as YLs and their OMs from around Australia, all present and ready to enjoy some face to face contacts.

Know your secondhand equipment

Ron Fisher VK3OM.

The Yaesu FT-7B and the FT-77

Before starting my description of these two interesting transceivers, a few comments on things I have overheard on the low end of 80 metres over the last few months. It seems that one of the main discussion topics is which ATU should be bought. I have to question this. First, why do you need an ATU at all? And second, why buy one, why not build one?

At my location I have six HF antennas and only one needs an ATU. That one is a very long dipole, centre fed with open-wire line. It requires a balanced ATU to work. It is an excellent all band antenna and is highly recommended. A balanced ATU is easy to make. See Drew Diamond's new Volume 3 of Radio Projects for the Amateur.

The other five are all fed with 50 ohm coax cable and do not require an ATU. These all have a low SWR, mostly well below 1.5 to 1 across all the bands they are designed to work on.

Before spending a couple of hundred dollars on a whiz bang ATU, carefully work out what you really need. That money might be better spent on a good mast that will really help you get out better. Don't get the idea that I am anti ATUs. I am not. They certainly have their place, but make sure you know where that place is. It's just that many newcomers seem to think that a poor antenna can be made better with an ATU. If you have any ideas on the subject, please let me know so we can share your experiences.

Now, on to the subject in hand.

FT-7B

The FT-7B was released on the local market in early 1981. It sold for $599 and, for a time, sold alongside the FT-7. The main difference with the "B" model was an increase in power output to about 50 watts from the 15 watts of the FT-7. The specification for the 7B actually rates the power at 100 watts input PEP. However, there were other subtle differences and also a small range of matching options.

In appearance the two looked almost the same, but close inspection will show quite a few changes. Let's see what they are. The first important change was to provide four band-switch positions for the ten metre band. However, only one of these was supplied with the appropriate crystal that gave coverage from 28.5 to 29 MHz, the same as the original FT-7. The other three crystals were optional extras.

For CW operators an audio peak filter was included. This had a bandwidth of just 80 Hz at -6dB that could prove very handy. AM was included with an additional switch added to the function panel to select it; however, reception was through the SSB filter which could not produce reasonable audio quality. The switch's alternate position selected the CW mode and the peak filter.

An RF attenuator with a red LED indicator could be selected by pulling the microphone gain control out. From memory it gave about 20 dB attenuation. The drive control was mounted concentrically with the "tune" control and this gave adjustment of the RF power output in the CW and AM modes.

Options available for the FT-7B included an external digital display, the YC-7B. This was designed to be used when running the 7B mobile and could be mounted on the car dashboard. I am not sure if it could be adapted for use with the FT-7. Perhaps someone could fill me in on that.

Also, a very nice matching power supply, the FP-12, was available. This was rated at 12 amps, but could actually run a 100 watt output SSB transceiver so long as you kept the gain down a bit and didn't run compression. It had a built in speaker of quite reasonable quality.

On the air the 7B performed much the same as the FT-7, in other words quite well for the time. You won't be disappointed.

So where does that leave the FT-7B today. Firstly, the 7B never achieved the same popularity as the original FT-7. It had a lot going for it, but perhaps it was just a bit late on the scene. It is not seen on the secondhand market very much and, when it does, brings very little more than the FT-7. Expect to pay around around $250 to $300 for a good unmarked example.

The YC-7B display would be very hard to find. I cannot recall ever seeing

Photo 1 – The Yaesu FT-7B and the YC-7B display unit.

one advertised, but you never know. I recall Dick Smith selling them out at bargain prices many years ago, so there are probably a few sitting in a drawer in someone's shack. The FP-12 power supply is highly recommended. A clean one would be worth about $100.

FT-77

The Yaesu FT-77 was another fairly rare model. The first advertisement I could find for the FT-77 was in the January 1983 issue of Amateur Radio. The price was $650 for the 100 watt version and $520 for the 10 watt model. This version was known as the FT-77S. I should point out that there was also an "S" version of the FT-707. This is, of course, the opposite way around to Kenwood where the "S" indicated the 100 watt output transceiver. The "S" versions are not common and I believe that they were primarily produced for the Japanese home market. However, a few did get here so watch out.

The FT-77 took over from the FT-707 and some notable changes were made. In some respects the 77 was simplified compared to the 707. The width control has gone and the AM facility has also gone. In its place, the FT-77 has FM, but only as an optional extra. I would think this might be hard to find in a second hand example. But, even if it is included, the FT-77 is not usable with ten metre repeaters as no split operation can be selected unless you have the outboard digital VFO.

Photo 2 – The Yaesu FT-77 transceiver.

Unfortunately, the RF gain control has also gone, replaced with a fairly useless squelch control concentric with the AF gain. The bar-graph meter of the 707 has gone and is replaced with a standard moving coil meter that, although small, is very clear. An SWR indicator is now a handy inclusion. Frequency coverage is from 80 to 10 metres including the new (at that time) WARC bands. Like most mid-priced transceivers of the time, no coverage of 160 metres was included.

So, how did the FT-77 perform? For the time, quite well. The VFO stability was very much better than the FT-707 - not up to the later synthesised rigs, of course, but very adequate. Both transmit and receive audio quality on SSB would be rated as better than average. In all, a very good starter rig for the newcomer to the HF bands.

The range of accessories was actually the same as those available for the FT-707 and they consist of the FC-700 ATU, the FP-700 power supply, the FV-700DM digital VFO/memory unit and the FTV-700 VHF/UHF transverter.

So, what is an FT-77 worth today? In excellent condition, about $325 and down to probably $200 for one in ordinary condition. For comments on the accessories see the September issue. But note the type numbers are different. For FC-700, see FC-707. Just add a 7 and to the others in similar fashion. Prices are the same.

That's all for this month, see you at the next Hamfest. Good bargaining.

Silent keys

Geoffery Hunziker VK2BGF

The Taree and District Amateur Radio Club regret to announce the recent death of our esteemed life member, Geoffery Hunziker VK2BGF

His funeral was held in Taree on Saturday December 18.

Geoff was a former PMG telegraphist, a Morsecodian and one of the founders of our Club.

He will be sadly missed by all who knew him.

Sent by John Britton VK2ZJB,
Club Secretary

Dick Grouse ex VK2AZG

Dick passed away on 10th November 2004 in Townsville. He was a keen and active Amateur in the NSW WIA for many years.

Dick and his late wife Hebe VK2AOK, were regulars on the HF bands. His homebrew 60 foot tower and quad on the hill at Marrickville in Sydney was a landmark and was the source of a booming signal around the world.

Apart from Amateur Radio, Dick applied himself to many pursuits and hobbies including chess, bridge, fossicking, and orchids. He was a keen member of the Landrover club. He will be dearly missed by his two daughters Jane and Dia and his two sons Richard and John. All of this family have qualified for and held amateur callsigns at some stage. Jane is not active at present but retains her late mother's call VK2AOK.

The end of an era."

Ken & Jane Duncanson VK4JUD & VK2AOK

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RF Power output: 1-20 W
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AM: 0.5-0.9 uV (10 dB SINAD @ 6 KHz bandwidth)
FM: 0.35-0.6 uV (12 dB SINAD @ 15 KHz bandwidth)
Selectivity: 35 built-in filters SSB/CW: 200-3000 Hz AM: 400-6000 Hz FM: 15 KHz
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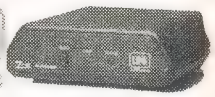
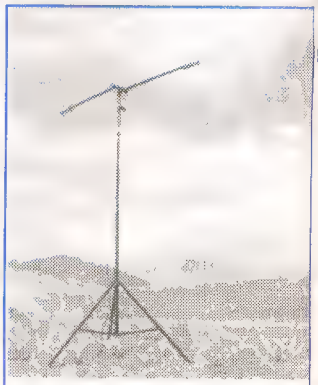


Z100 TUNER



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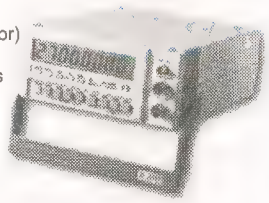

Model MO-2002 Bench Top Digital Milliohm Meter
FEATURES

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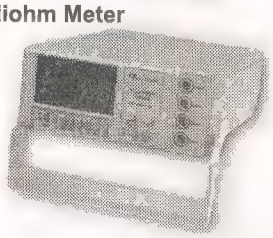

Detailed data sheets available on all Lutron instruments

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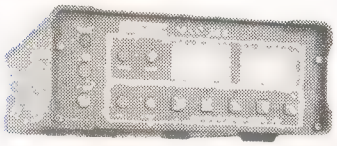

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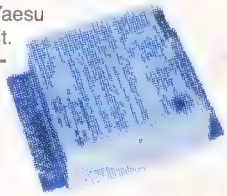

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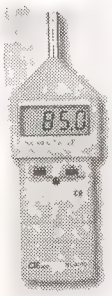

Model FG-5000 – Digital Force Gauge (5Kg. Full Scale)
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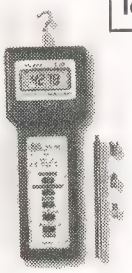

Model HT-3006HA – Digital Humidity Meter/Thermometer
FEATURES

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- High Resolution, Accuracy & Repeatability
- Data Hold, Max & Min Functions
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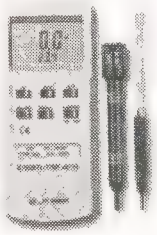

Model PH-207 – Digital pH Meter c/- Model PE-11 pH Probe
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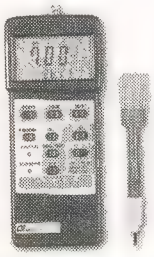

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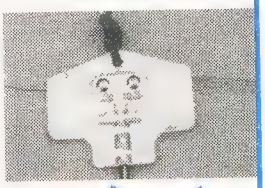
TEN-TEC

Ten-Tec model 3003 Acro-Bat antenna hanger.

Made from UV resistant polycarbonate plastic, as used by Power companies for covering outdoor electric power meters. Hammers won't break it. Hardware is stainless steel. Can suspend either a ladder line-fed or small gauge RG-58 or RG8X coax-fed wire antenna. or ladder line with internal pegs. Internal screw connections solidly clamp the wire antenna to the coax or ladder line feedline itself Attach wire and coax to the screw terminals, and clamp the two sides together and you are ready to hoist your antenna. Easy hoisting. of wire antennas by rope.



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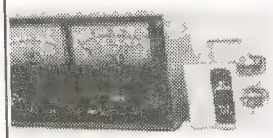

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(We cannot cut cable at the Field Day)

VK2 news

Compiled by Tim Mills VK2ZTM.

New Year greetings to all. It is 5 years to go until the centennary of the formation of the Institute at a meeting of concerned Wireless Experimenters at the Hotel Australia in Sydney, early in March 1910. It is also fifty years since the development of the VK2WI site at Dural.

The NSW Division signed the Implementation Agreement with the National WIA at the December council meeting. The NSW Division remains a Company in its own right, having to maintain all the requirements of a Company. This year, as usual, there will be an Annual General Meeting, annual reports and elections to the Board. The expected date of the AGM would be after Easter, sometime in April. Nominations for election will be called late this month or early March. The Division's financial year is the same as the calendar year. It ended on 31st December. By now, all annual reports should have been submitted, ready for publication. AGM material will be sent out to NSW members shortly.

A position became vacant on the Council and this has been filled by the cooption of Owen Holmwood VK2AEJ, for the remainder of this Council year. He has the portfolio of Assistant Secretary, a position he is familiar with, having recently been the Divisional Secretary. He has replaced Adrian Clout VK2BFN.

This month is the annual Central Coast Field Day at the Wyong racecourse on Sunday 20th. The Division will be in attendance and the Deceased Estate section have advised that they will be there with equipment on behalf of recent Estates. The Parramatta office and Bookshop is open 11 am to 2 pm on Tuesday, Thursday and Friday, the first Tuesday night of the month and on the Sunday of the Trash and Treasure days. Contact by telephone 02 9689 2417; FAX 02 9633 1525; Internet vk2wi@wiansw.org.au ; or mail to P. O. Box 9432, Harris Park, 2150.

VK2WI was operated by members of the Dural team on 80 metres on New Years Eve as a "Welcome to 2005". Band conditions were good for a change and over sixty contacts were made in the three hours across midnight. During January, work was carried out on the antenna system on one of the towers. Several old antennas were removed, some of the remainder were changed due to their age and a couple of new ones added. The six metre beacon, VK2RSY, on 52.420 MHz did not make it into the New Year. Still, it had a good innings since it was constructed in the early 1970's. It was decided not to repair it as its replacement was nearing the time when it could go on air. It will be on the new frequency of 50.289 MHz in the CW mode. Work is proceeding to develop replacements for the two metre and seventy centimetre beacons, which were both aged units and are off air. It was discovered recently that the various published frequencies for the 23 cm VK2RWI repeater, had been in error ever since the frequency offset was changed from 12 to 20 MHz. You might like to note that the operating channel is 1273.500 output, with the input 20 MHz higher on 1293.500 MHz. The 160 metre transmission has been restored by diverting the antenna out of and away from trees. This will be a temporary measure until a new antenna is constructed and installed in a better position. The trees grow too fast. The combined Sunday morning news session - at 10 am - with State and National segments is now in place. This required format changes by reducing the length of some of the former contents to fit the time slot. The evening news session continues to use the former format that allows for more detailed news segments. It is transmitted at 7.30 pm Sunday. The VK1WIA segment is only used in the morning. The Hunter Radio Group have resumed their Monday net at 7.30 pm., 3593 kHz and local Newcastle VHF and UHF channels. They include highlights from that week's VK2WI session.

Col VK2TRC retired at the end of 2004 as the compiler and assembler of the VK2WI State news script. He is now devoting some of his 'spare time' to a private enterprise venture. We wish him well and thank him for his past efforts. While his temporary replacement may already be hard at it, we welcome others to join the production team.

Would you like to assist? We need more than one person to cover those times when a break is required and also to share the load. You require access to the Internet, for both the materials passing through the Parramatta office, as well as obtaining stories and items from the web. One also needs to have the ability to send and receive FAX. You need to compile the various items into the script and send it - currently by FAX - to VK2WI by Saturday afternoon. This ensures a safety margin with the transfer, as the script folders are assembled late Saturday. The text is also sent to the Webmaster for inclusion in the Internet news pages. With today's 'modern' communications, you don't have to be in Sydney to perform the task of "News Compiler". Please advise the Parramatta office if you can assist.

There is a request from Brian VK2WBK, who coordinates the NTAC role. He would like all repeater groups to check the entries for their systems in the current callbook. Please send in your updated list to the Parramatta office by one of the contact methods advised above. We would also like Clubs and Groups to send in a current list of meetings and gatherings so that the coming events report in the news sessions reflects correct details. Thank you. Until next month.

73 - Tim VK2ZTM.

John Moyle Field Day Contest 2005

19 – 20 March, 2005

Details on page 52

VK6 news

Will McGhie VK6UU
will2@iinet.net.au
08 9291 7165

VK6 WIA Division to wind up

As you will know by now the VK6 WIA Division is to wind up. The Special general meeting held on December the 4th 2004 decided the outcome by a large majority; well over the 75% needed under the constitution. The VK6 council will continue in a caretaker role while the National WIA takes over the role. Even though the changes have all been worked through, the mechanism of paying bills, such as Roy's help line phone costs etc, are yet to function. These ongoing bills will now be sent directly to the National WIA. Once the system is fully working the remaining small amount of money held by the VK6 division will be divided between the nominated clubs.

The winding up of the VK6 WIA Division is a time to look forward to the future and to reflect on the history of our local VK6 WIA. I have in my possession the original minutes of the meetings held that started the VK6 Division way back in 1919. The book is a brown paper covered foolscap notebook and on the front is written in ink:

"No 1

Minutes from 24th Nov. 1913 to 26th June 1924.

W.A. Radio Club till June 1916

WIA as from 3rd Nov. 1919."

The VK6 WIA was born out of already existing clubs in VK6. The minute book is largely written in long hand with a nibbed pen by various minute takers over eleven years. It can be difficult to read some of the minutes due to the style used but I will do my best to give you a brief history of the VK6 WIA covered in book 1, 1913 to 1919.

It is important to remember that I have done my best to read and summarise the minutes but do not take these brief notes as accurate history without any fault as there could well be mistakes.

The very first page is titled "W.A Radio Club" and is dated 24th October 13 (1913). It reads:

"A meeting was held at the residence of Mr Sibley North Perth on Monday the 15th inst (instance), for the purpose of forming a Radio – Telegraph Club."

Those present Messrs, McKail, Coxon, Murray, Sibley (2) and Dean

Page one November 1913

To put this into a time frame, this was only 18 years after Marconi, in 1895, began laboratory experiments at his father's country estate at Pontecchio Italy and succeeded in sending wireless signals over a distance of one and a half miles. And 12 years after Marconi in December 1901 transmitted the first wireless signals across the Atlantic between Poldhu, Cornwall, and St. John's, Newfoundland, a distance of 2100 miles.

The W.A. radio Club passed 3 rules:

1. Club to be known as the W.A. Radio Club.
2. The subscription to be 5/- p a in advance
3. Boys attending school will not be accepted, but junior societies may be affiliated.

The Elected Chairman was Mr Ellison. "The secretary was directed to write the Education department asking permission to use the Science class room at PBS (Perth Boys School) for meeting purposes. Also to have notice drawn through the press to the formation of the club."

It is interesting to note that the elected Chairman, Mr Ellison was not present at the meeting, or at least as far as these first minutes reported. Perhaps even way back then people were nominated to positions in their absence.

The use of the Science rooms at PBS was approved by the Honourable Minister for Education.

The newly formed W.A. radio club set about advertising itself in the press and recruiting members from around Western Australia. Remember this was a very new science and bringing together few and far between people interested in spark radio and the wonders of communicating via the ether was as exciting and unknown as it gets. The minutes reflect new members, some called corresponding members who lived great distances from Perth. For all practical purposes radio communications did not exist. These members had an interest in the new science and a radio club was a means of gaining information.

These early minutes mentioned little about radio communications but mainly the running of the club and new members. One item in the minutes dated 30th March 1914 was to write to Messrs Sweeny and Cox asking for a quote for wave meter 50 m upwards. These early meetings usually had a lecturer and, as an example, this meeting on the 30th of March 1914 opened at 8pm "with a lecture on Spark Gaps by Messes Sibley followed by a practice in Morse code."

At the meeting held on 21st June 1914 a name change was made from W.A. Radio Club to W.A. Institute of Radio and Scientific Experimenters to expand the scope of the club.

The last entry for 1914 is for the month of July a month before the beginning of World War One even though lectures had been arranged for August.

The next entry is for 3rd February 1915 and one item is the first indirect mention of WWI. "Move that McKail and secretary interview military department and offer free service of Institute in training members of Signalling Corps in art of Radio – Telegraphy."

Throughout 1915 considerable mention is made about the military with various offers mainly to do with training and information.

At a meeting on 14th February 1916 a motion was passed to shift the direction of the club away from radio due to "Wireless Telegraphy being stagnant on account of the war." A series of lectures were arranged on various topics such as chemistry, photography, astronomy, glass blowing, production of high vacuum and the newest discoveries in science.

State news

The last entry for 1916 was June 12th and mention of people going to war. The very next page is 3 years later, 3rd November 1919. What a world apart the two side-by-side pages are.

This meeting held on 3rd November 1919 was chaired by Professor Ross and a motion was passed to change the name of the club from W.A. Radio Club to The Wireless Institute of Australia Western Australian Division. The reason given was to conform with similar institutions in the Eastern States. Interesting to note that the name change was not from W.A. Institute of Radio and Scientific Experimenters as was reported at the meeting held on 21st June 1914.

So was born The Wireless Institute of Australia Western Australian Division. It is difficult reading from the minutes deciding what the Wireless Institute of Australia was in 1919. Was it just a common name with common ideals or was it more? My opinion was it was just a common name with common ideals, as the hobby was very much in its beginning. There was not even a licensing system, as we know it today.

Next month more from the first minutes of the VK6 WIA division.

VK6 QSL Bureau Report

Here is a summary of the QSL incoming cards for 2004.
By country-number of deliveries- total number of cards recd:

JA - 9 - 3220,	DL - 4 - 2110,	UA - 3 - 1192,	SP - 3 - 490,	OZ - 3 - 75,	SM - 2 - 151,	9A - 2 - 200,		
OE - 2 - 330,	OK - 2 - 463,	ON/PA - 2 - 386,	G - 2 - 239,	YL - 2 - 39,	PY - 2 - 68,	YO - 2 - 12,		
UT - 1 - 165,	9V1 - 2 - 42,	S5 - 1 - 125,	OM - 1 - 92,	YB - 3 - 19,	ZS - 1 - 5,	FK - 1 - 4,	DU - 1 - 5,	
XX9 - 1 - 1,	4X4 - 1 - 30,	VR2 - 1- 11,	EI - 1 -9,	I - 1 - 540,	OH - 1 - 156,	VU - 1 - 9,	BV - 1 -29.....	

There have been cards received from three VK bureaux, which have been sent to them from overseas countries, which should have been sent here in the first instance. They were no doubt sent to them so as to make up a packet which was economical for them to post, but which cost the VK bureaux money to on-forwarding them.

As there are over 300 countries, and the bureau has received cards from 30 for 2004, there are still a great number which have yet to send cards to the VK6 bureau, and that includes most of the same countries for 2003.

Total number of cards received 11790 for 2004

73 Neil VK6 QSL Bureau

VK4 news

Qnews

Alistair Elrick VK4MV

My apologies for the recent lack of VK4 Notes input to AR, work stress and health defeats all good intentions.

The future of QTC

As Bruce Jones VK4EHT said in the latest QTC magazine, it is planned QTC in its present form will only continue until June 5th 2005. This covers the commitment to those renewing as members of the WIAQ up to June 2004. Though QTC ceases to be published as of July 2005, a page in AR itself will replace the insert in AR. Bruce went on to say it is not the intent to abandon e-mail and posted QTC subscribers. However exact options are still being considered.

VHF a CQ request to boost VHF/UHF SSB DX

The hot and sticky summer months in Queensland are accompanied with good propagation openings on VHF and UHF Bands. Operators are content with just doing the odd DX contact on FM, however according to John VK4AJS and others they are missing out on a much expanded DX world of SSB operation, not to mention the sheer excitement as we heard in the WIA National Broadcast! John reports that he and other operators in Central Queensland have been having good and regular contacts to southern operators. However, even though conditions to the north are more intense and more consistent there are far fewer contacts made mainly because northern operators are reluctant to dip their toes into the world of SSB DX.

John from Yeppoon on the CQ Coast reckons it's time for the northern stations to get game and be keen to join in with the promise of good results! Just look at the fantastic DX on 2 that Felix and Mike work day in day out!

Most of the operators are on air from 5am to 7-30am daily with skeds from Yeppoon southwards to Gladstone, Hervey Bay and Brisbane on Tuesday, Thursday, Saturday and Sunday at 6.50am. The frequencies are 144.1, 432.1 and 1296.1 MHz. If you are nervous about putting your toe into the SSB pond or want tips on how to operate this DX mode then John is eager to hear from you - either by e-mail at vk4ajs@optusnet.com.au or by phone 0412.989.530

SCARC powering on

Harvey Wickes, VK4AHW, the president of the Sunshine Coast Amateur Radio Club is pleased to advise that the club recently took possession of a new 7 kVA Power Generator, valued at over $2,500, compliments of the Caloundra RSL club. As part of its community support program, the Caloundra RSL club generously supports local community groups and organisations. A letter requesting the RSL Club's assistance in providing an Emergency Power Generator for use by the WICEN group at SCARC was considered and approved by their Committee members. On behalf of the members of the Sunshine Coast Amateur Radio Club, we wish to say a big "Thank You" to the RSL, and assure them that the generator will be invaluable as a means of maintaining vital WICEN communications in the event of a cyclone or flood, when power services are often cut.

The TARCinc XMAS

The party happened on Sunday December 19th 2004 attended by 65 operators and support crews - all had a very good time! The Monster Auction run by Wally VK4DO assisted by Don VK4MC enticed many a dB out of the thrifty pockets of attending hams. The venue at the QTH of Tony VK4TJS allowed the treasure to expand from its usual "kilometre" into a "hectare". Test Equipment, Radio Transceivers, Boom Boxes, Cabling and Connectors, the order of the day, Brendan VK4HAX even got a lifetime supply of Midland UHF handhelds for 2 dollars!! Wally and Don did an excellent job getting through all the treasure by 4.30pm. A quick dip in the pool ensued, followed by firing of BBQs and cooking of the evening banquet and the Christmas Pressie Auction. A vote of thanks goes to Tony VK4TJS, for providing such a fantastic venue!

Matters digital

Last week's Queensland Digital Group general meeting was that combined meeting with the SEQATV group where Richard VK4ZAA showed some sound card interfaces and Gary VK4ZA demonstrated his PDA's amateur applications. Bruce VK4TRS has his gateway fully working. DXcluster, convers server and gateway access can now be accessed via any node on the QDG network and some also accessible from VK4TTT on the Gold Coast and VK4PKT in the Logan zone. A number of QDG members have expressed an interest in the HF bands recently. QDG say they will need a hand to test some radio equipment and antenna leading up to next years JOTA, perhaps a regular weekend workshop. For details please contact Richard VK4ZA on 3376 5231. This will be a great boon to JOTA who were somewhat missing south of Mackay this year by all reports to the Q.

VK7 news

Justin Giles-Clark, VK7TW
Email: vk7tw@wia.org.au
Regional Web Site: www.reast.asn.au

Tasmanian Highland Hamfest 2004

On December 4, 2004, the Central Highlands Amateur Radio Club of Tasmania (CHARCT) hosted the Tasmanian Highland Hamfest 2004 and if you missed it then you missed one of the best gatherings of Tasmanian radio enthusiasts in a long time!

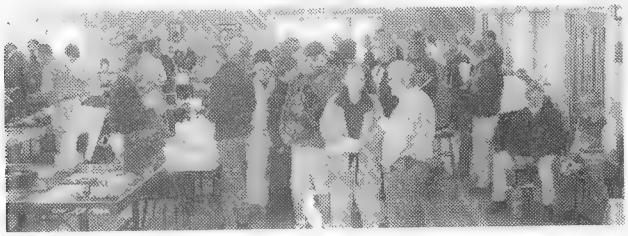
It was estimated that about 140 people from all over Tasmania and the mainland made the trip to Miena at the Southern end of the Great Lake in the Central Tasmanian Highlands.

The displays from vendors were very enticing. TTS Systems with a wide range of equipment and accessories including Ten-Tec, SGC, Diamond, Autek and Buddipoles. David Benchoam & Mum were there from Benelec with Yaesu, Revex and Comet equipment including an FT1000 that I believe was sold. The crew from Marcom Watson had a comprehensive display of ICOM equipment including the IC-7800 with a price tag of >$17,000! Apparently there have already been three sold in Australia! TET Emtron and Bushcomm antennas had a great display of antennas and accessories all the way from VK6 and were doing a brisk trade and Solar Tasmania and VK Electronics had a great display of solar equipment including solar cells, batteries and chargers.

Susan, VK7LUV who is the current president of the Australia Ladies Amateur Radio Association and family manned or should I say ladied the ALARA stand and she was deep in conversation with Hamfest attendees each time I went past!

The CHARCT stand was doing a brisk trade in the Hamfest CD-ROMS full of useful software and the buy and sell stands that seemed to be doing a very brisk trade.

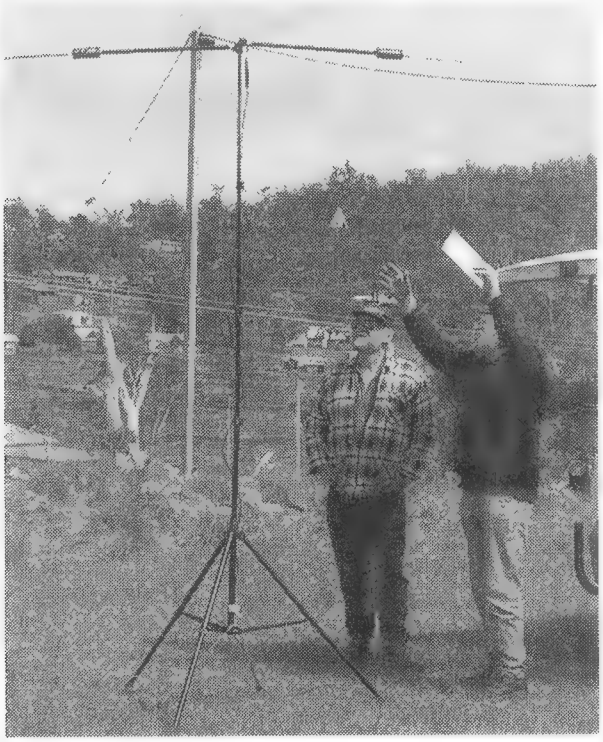
Rex, VK7MO had a stand with his meteorscatter-troposcatter station and was demonstrating his weak signal digital techniques. Dick, VK7KVB had a very impressive HF/computer station set up and Brian, VK7KBE had his van



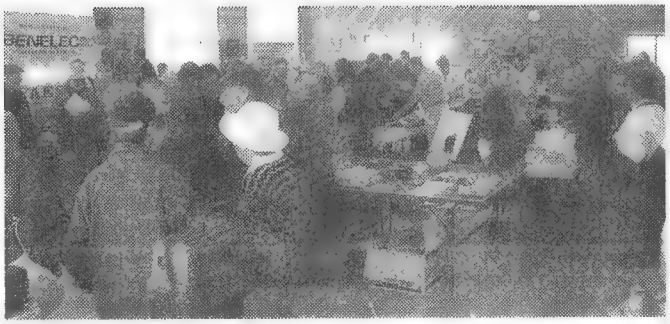
Radio people doing what radio people do best – rag-chewing!

Susan, VK7LUV and family on the ALARA table.

State news



Bryan VK7KBE blessing the Buddipole antenna with VK7PC looking on.



Frenzied buying at the Tasmanian Hamfest buy & sell tables!

set up outside with a HF station and was demonstrating the very portable Buddipole antenna system.

The Radio and Electronics Association of Southern Tasmania was demonstrating 70 cm amateur television and had a number of videos showing the hobby of amateur radio and quite a few new members were signed up.

The raffle of the DSP speaker donated by TTS System was won by Dave, VK7DC and the resonant circuit LC network turned out to be 7.983 MHz and the Bushcomm antenna prize went to Alan, VK7ZAR.

It was great to see many from the CB fraternity and we hope you found that bargain you were looking, struck up a few friendships or found out a little more about what amateur radio can offer.

Many thanks has to go the CHARCT crew especially those people manning the kitchen, lunch was great. Thanks to all for a fantastic day.

Sewing Circle BBQ 2004

On November 14, 2004 about 60 people enjoyed the hospitality of Ken, VK7DY and family on their property at Orielton for the social event of the VK7 amateur calendar, the Sewing Circle "net" BBQ. There was a radio, WLAN demonstration, steam engines, model boats and planes and even how to put a chook to sleep!

The Sewing Circle Trophy went to Franck, VK7CK from Deloraine.

The homebrew competition was won by Dan, VK7DAN for his power supply and Jpole antenna, second prize went to Ken, VK7KRJ for his APRS experimenting and an encouragement award was presented to Hayden, VK7HAY for his Jpole antenna.

The Terry Wilson, VK7HTW, SK award went to Nick, VK7HAF for services to Amateur Radio. Bill, VK7AAW presented his first morse key to Nick with a great story about how he was a Novice in 1983 and at 5wpm made a contact with a VK3 who became a great friend.

The raffle was won by Kevin, VK7KV and the mystery prize of a dozen freshly laid chook eggs was won by Peter Rathbone.

Many positive comments were heard from people finally meeting and putting a face to a name. A great big thank you has to go to Ken, VK7DY, Wendy and his family for making the day a fantastic success.

Northern Tasmanian Amateur Radio Club

The meeting of NTARC on Wednesday, 10th November was well attended and 12 members were presented with their membership certificates. Eight members completed their applications at the meeting and they were presented with their certificates at the Barbeque at Myrtle Park on the 8th of December.

At the conclusion of the meeting, Tony Hart from Centrelink gave a talk on the advantages and disadvantages assets can have on various payments from Centrelink.

After Tony's talk, our President Al,

Kevin, VK7KV (raffle winner), Ken, VK7DY and Chris (US Army Engineer and raffle scrutineer).

VK7AN bestowed life membership of the Club on Joe, VK7JG for all his past work on behalf of amateurs throughout Tasmania and in the North in particular.

Radio and Electronics Association of Southern Tasmania Inc.

On Wednesday 1st December, 2004 a group of about 35 people attended the Moonraker antenna manufacturing facility at Technopark in Hobart. It was great to see so many from the CB fraternity come along for the visit.

Our host for the evening was Chris Edwards, Managing Director, who is the son of the late Len Edwards, VK7LE who started the company back in the 1960s. Many people in the group remembered Len and his converted service station in Lindisfarne.

Moonraker has about 20 staff and undertakes all their own design and research and development and exports 50% of their products to over 30 countries. They aim for niche markets with a high value product, including military and naval antenna systems.

Chris went on to show us a sample of some of their products that included - near vertical incidence skywave antenna systems, wire loop antenna used by the Russian Army and a portable surveillance antenna used by the British Army in Afghanistan. Danny, VK7HDM an employee of Moonraker gave us an demonstration of the new HF auto-tunable verticals in the test shed.

Chris Edwards next to a sample of the antennas that Moonraker manufacture.

Thanks have to go to Chris, Danny, and staff for allowing us to visit and for putting on a very informative night. It's great to see a Tasmanian technology company successfully competing on the world stage.

Reminder the next meeting is the Annual General Meeting on 2nd February 2005, 8pm at the Domain clubrooms. Of course, don't forget the Wednesday afternoon social gatherings from 1200-1600 every Wednesday at the Domain.

DT

Silent key

Don Bottle SWL

It is with great sadness that I have to inform you of the passing of Don Bottle on 30th November 2004.

Some would wonder who Don Bottle was? Don belonged to the Masonic club and shooting club and was very handy with a camera, but, what Don was best known for was his hobby as a shortwave listener. He never missed an evening with the Sewing Circle, or a Thursday night with the Central Highlands club, ask him who belonged to a VK7 callsign and he could tell you and many other calls around the world.

Don loved his weatherfax and SSTV among other modes, didn't believe in IRLP, Echolink and thought JOTA should stick with radios, antennas and packet and stay off the internet, that was Don, he just loved to help people.

He had one of those memories where he never forgot anything. He wasn't unknown to pick up the phone and report on your signal, good or bad.

I'll miss you Don, sitting in here giving us heaps about how it all should be done!

Vale, Don.

(Dale, VK7NDH)

"Hey, Old Timer..."

If you have been licensed for more than 25 years you are invited to join the

Radio Amateurs Old Timers Club Australia

or if you have been licensed for **less than 25 but more than ten years**, you are invited to become an **Associate Member** of the RAOTC.

In either case a **$5.00** joining fee plus **$8.00** for one year or **$15.00** for two years gets you two interesting OTN Journals a year plus good fellowship.

Write to
RAOTC,
PO Box 107
Mentone VIC 3194
or call Arthur VK3VQ on **03 9598 4262** or Bill VK3BR on **03 9584 9512**,
or email to raotc@raotc.org.au
for an application form.

State news

Canberra Region Amateur Radio Club Inc

The ACT Division of the federated WIA ceased to exist, in a formal or legal sense, when on 17 December 2004 the ACT Registrar-General issued a new Certificate of Incorporation approving the name change from the "WIA ACT Division" to the "Canberra Region Amateur Radio Club". At the same time as applying for the formal name change, the opportunity was taken to update the "Objects and Rules" to reflect the new club name, to remove the prior references to "Federal" functions and to reflect some minor changes to the Club's aims.

The old WIA ACT Division website is being updated and information on club events, membership etc can be found on the CRARC website. At present the safest link to the CRARC website is from the Club's links on the WIA website. From time to time more important matters, or those of wider interest, will be reported under the "Club Notes" in Amateur Radio.

Most of the members of a radio club that previously operated as the "Canberra Amateur Radio Club" have now joined the CRARC and have decided to close their organisation. As part of that process they have generously offered their logo and call sign to the new CRARC. Work is in hand to produce new logo artwork and the need for a second club callsign is being assessed.

During 2004 an extensive email newsletter was trialled in lieu of a weekly broadcast which had become difficult to maintain given the demands on members' time and the acceptance of the computing as a genuine facet of the amateur radio hobby. It is also used to advise recipients of equipment disposals. The email newsletter is now regularly sent to 183 recipients and is available on request to <president@vk1.ampr.org> or broadcast@vk1.ampr.org

The CRARC has advised the national WIA that it will continue as the sponsor of the VK1 Award, with a new award certificate based on the new CRARC logo. A regular net on 3570 KHz will operate each Sunday evening at 8.00 pm local Canberra time.

THE
CENTRAL COAST
FIELD DAY
Wyong Racecourse Sunday 20th February 2005

Traders Promote your products and expand your business at the biggest gathering of hams in Australia

Amateurs Plan your trip to the most important event in the Ham Radio calendar

THE CENTRAL COAST AMATEUR RADIO CLUB INC.
For further information
Web: www.ccarc.org.au. Phone 02 4340 2500
email: vk2afy@hotmail.com

Club news

IRLP Contest

The Bass Amateur Radio IRLP Group in a joint venture with an American Club are currently putting together an IRLP contest.

What is required from IRLP Operators and Node Owners is there ideas for such a contest. The B.A.R.IRLP.G. has a sponsor who will donate a trophy every year to the winner.

The US side will manage the contest. The Australian sponsor has asked the Group with the joint venture club out of America to put it all together.

Remembering that it will be for IRLP only and no other modes.

So as not to have any delays to your replies please send them in by the end of February 2005 to

The Bass Amateur Radio IRLP Group
PO Box 2280
Rosebud Plaza
Rosebud. Victoria. 3939
Australia
contact node 6391 or 4865
email: IRLPcontest@bassirlp.cjb.net

www.pca.cc
Email from anywhere
via Winlink 2000
Use PACTOR-3
on HF to send
Mail, Grib Weather,
Weatherfax & Images
Contact marc@pca.cc
Sydney 02 8902 0107

PLAN AHEAD:

Harry Angel Sprint

22 April

Adelaide Hills Amateur Radio Society

Christine Taylor VK5CTY

In December we had our usual, very pleasant Christmas Dinner at the Blackwood RSL Club at which among other activities, the Denis Grieg Award to the amateur of the year was made.

This year the trophy was presented to Bryan VK5SV, who has decided to retire as Treasurer after serving in that capacity for almost 20 years. He was probably the only person surprised by the award. All those at the dinner considered it was very well deserved. Congratulations Bryan, we hope to see you at the club for many more years even if someone else will be sitting at your table, taking the money!

AHARS holds another social meeting in February as we are unable to use the school premises during school holidays, but normal and interesting meetings will be resumed in February. Any amateur visiting Adelaide on the third Thursday of the month is welcome at the Blackwood High School at 7.30. A call on a local repeater is almost sure to give you any more information you need.

Bryan VK5SV with the Denis Grieg trophy

There were a number of members of AHARS at the wind-up dinner for the WIA(SANT Div), held early in December at which two Certificates of Appreciation were presented by the new WIA president, Michael Owen.

The certificates were presented to two men who have served the amateur community as teachers to those wishing to become amateurs, for many many years: Frank Holsten VK5LK and Geoff VK5TY, who also is President of AHARS. Both were worthy recipients of the recognition because they both have been and continue to be teachers who are responsible for many of the VK amateurs.

Congratulations to you both.

Urunga Radio Convention – March 26 & 27

Well it's coming up to that time of the year where preparations are in hand for the next "Urunga Radio Convention" "The home of fox hunting", This year we welcome all to "Urunga". We have upgraded our foxes (replaced the steam driven ones), and endeavoured to keep the interest in the events by adding or changing hunts to keep up with the times. Events for juniors both days.

Visit our web page for historic and new photos, from the start of the convention in 1949 to today. http://www4.tpgi.com.au/goldy2/ or any search engine.

The Urunga Convention is held at Easter each year on the Saturday and Sunday, every one is welcome. It's held in the Senior Citizens hall in Bowra Street Urunga. There is plenty of accommodation available, such as caravan parks, motels, and the Ocean View Hotel where many of the old conventions where held, the old trophies are still on display there when not displayed at the convention.

There are two full days of Fox Hunts,

Fox found.

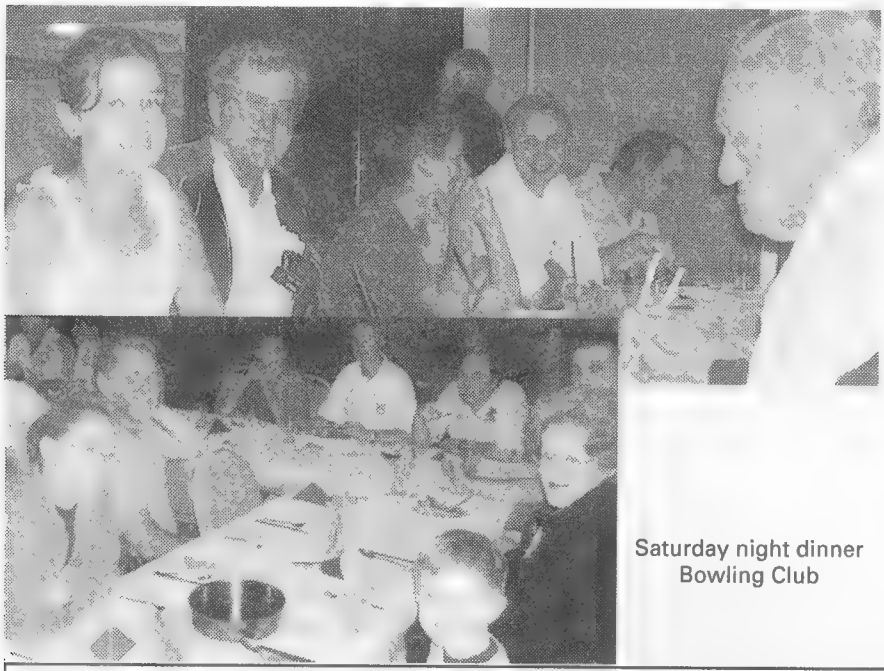
Cameron Williams "broken sniffer"

Adam Scammell VK3YDF Brian Ackerly VK3YNG overall winners
Stefan Winkler Junior Winner, Arnold Austin VK2ADA

both pedestrian and mobile, also junior events on both days. You get to see a lot of Urunga. There are also quizzes, competitions, raffles, door prizes etc. Tables are available for trade displays, old gear, second hand equipment etc. Free tea and coffee available all week end for those registered.

There is a comfortable lounge area available for those that want to relax away from the activities.

Ken Golden VK2DGT
sec. WIA Urunga Radio Convention INC.
Email krgolden46@hotmail.com



Saturday night dinner
Bowling Club

Urunga Convention 2004

FOX Hunt Results

Saturday:

3.5 MHz mobile	1st Adam Scammell VK3YDF
2 metre pedestrian	1st VK3YNG Bryan Ackerley
	2nd Adam Scammell VK3YDF
2 metre mobile	1st non event
2 metre talkin mobile	1st Adam Scammell VK3YDF
	2nd Brian Linsley VK2BI

Sunday:

Urunga Scramble	1st Steve Latham VK2BGL
40 metre fun event	1st Rodney Sommerville
2 metre mobile	1st Adam Scammell VK3YDF
	2nd Ken Golden VK2DGT
2 metre pedestrian	1st Brian Ackerly VK3YNG
	2nd Adammell Scammell VK3YDF
2 metre talkin ped.	1st Stefan Winkler
Jack Gerard Memorial Award:	1st Adam Scammell VK3YDF 3 events
Brian Slarke Memorial Award	1st Adam Scammell VK3YDF

Overall for 2 days

Saturday:

Junior 80 metre	1st Mitchell Guest
	2nd Mathew Linsley

Sunday:

Junior 80 metre	1st Stefan Winkler
	2nd Bhoni Austin

ar

Sales of pre-loved Ham equipment, components & computer gear

Hire of trestle tables at $12 per 6ft/$15 per 8ft

Ample parking, $5 entry
Open to Traders at 8.30am

Free tea and coffee
Light refreshments available

Healesville Amateur Radio Group Inc.
C/o P.O. Box 346, Healesville, Vic, 3777

VK3GHA's HAMFEST Sale

Sunday 27th February, 2005
10am to 2pm
Healesville Memorial Hall
Maroondah Highway, Healesville

For booking of trestles and further information:
Gavin VK3TLN 5968 8482

Call in on VK3RYV – 146.725

Bring your family – you can also visit Healesville's famous tourist spots

DXCC listings as at 31 December 2004

Callsign	Countries
Honour Roll(326)Phone	***General listing-Phone***
VK5MS	335/389
VK4LC	335/382
VE6VK	335/372
VK4UA	335/370
VK5WO	335/368
VK6LK	335/360
VK3AMK	335/354
VK3QI	335/349
VK3AKK	335/348
VK2FGI	335/341
VK3DYL	335/341
VK3EW	335/341
VK3SX	335/341
VK6NE	333/349
VK2AVZ	333/344
VK1ZL	333/339
VK6HD	332/358
VK2DEJ	332/338
VK3OT	331/345
VK4OH	330/337
VK6APK	330/335
VK4AAR	330/334
CT1EEN	330/000
VK3CSR	329/338
VK3YJ	327/333
General listing-Phone	
VK5FV	325/328
VK4SJ	325/326
VK7BC	324/329
EA3AKN	323/331
VK3EUZ	323/324
VK6ABS	321/000
VK4LV	319/321
VK1TX	319/000
VK2UK	315/320
VK6RO	312/319
VK3JI	310/325
VK6LC	310/313
VK4ICU	303/305
VK3IR	302/306
VK6DY	297/301
JA3EY	296/300
VK4EJ	296/298
VK2CSZ	290/293
VK2HV	288/000
VK4BAY	287/290
VK7TS	285/286
9V1RH	283/285
VK6ANC	279/283
VK3DP	274/277
VK3DBQ	272/275
VK2CA	271/000
VK3UY	264/266
VK3VQ	261/278
JA7MGP	260/000
VK2XH	257/000
VK3JMB	255/000
VK8NSB	255/000

Callsign	Countries
Honour Roll(326)CW	***General listing-Open***
VK3CIM	254/258
VK8DK	253/254
VK2FHN	243/000
VK4AO	240/000
VK8KTC	231/233
PY2DBU	228/229
UA6LDD	225/226
VK8AM	225/000
VK4IL	212/000
VK3DVT	206/209
VK6BH	200/000
VK6RZ	187/190
VK7JAB	186/000
G0VXX	184/000
VK6EH	170/000
VK2EJK	169/000
VK4CHB	167/168
VK2BQS	166/169
VK5EMI	160/000
VK2JAU	160/000
VK4ARB	159/160
JA6KTY	156/000
VK2GSN	152/000
VK6HZ	151/000
VK7LUV	148/000
VK2SPS	143/145
VK2QV	141/000
VK3JXO	141/000
VK8LC	137/000
OK1ZSV	136/000
VK3DQ	133/147
SV1XV	130/131
VK4FNQ	130/000
VK4VIS	127/129
VK5ATU	126/128
VK2IRP	125/101
TG8NE	125/000
VK2VZQ	122/000
VK4EZ	119/125
VK2MH	116/118
VK5UO	112/115
VK3CML	109/000
VK3MRG	108/000
AX4EJ	105/000
SV1EOS	105/000
VK9RS	104/000
3W2LC	102/000
SV1FTY	102/000
SV1GYG	102/000
VK3PA	102/000
VK6ISL	102/000
VK2EJM	101/103
VK3KTO	101/102
VK1PRG	101/000
HS1NGR	101/000
CU3AAT	100/000
VK5JAZ	100/000

Callsign	Countries
VK3QI	334/346
VK6HD	333/354
VK5WO	331/347
VE6VK	326/353
General listing -CW	
VK6RZ	315/320
VK3AKK	312/317
VK3KS	307/335
VK4LV	299/306
VK4ICU	291/000
VK3JI	274/299
VK6MK	249/252
VK7BC	246/255
VK2CWS	245/247
VK3DP	245/247
VK4DA	237/239
VK3CIM	235/236
VK3DQ	234/261
RD3AF	233/000
VK7TS	219/000
IK1ZOD	210/000
DL7PA	203/000
VK6RO	193/195
VK4CXQ	174/000
VK5UO	171/172
DK6AP	168/000
VK4UA	151/164
VK3DBQ	150/000
VK4AAR	144/146
VK8AM	138/000
N0TM	135/000
VK7DQ	131/132
DL6UGF	126/000
K5QNM	110/113
VK5BWW	110/113
SM6GZN	110/111
PY2DBU	108/111
T94VT	108/000
UR5BCJ	103/105
Honour Roll (326) Open	
VK4LC	335/382
VE6VK	335/380
VK4UA	335/372
VK5WO	335/372
VK3AMK	335/354
VK3QI	335/350
VK3AKK	335/348
VK3EW	335/341
VK3OT	334/348
VK7BC	334/343
VK6HD	333/360
VK2AVZ	333/344
VK3UY	333/336
VK4AAR	332/336
VK2UK	327/332
VK4LV	323/331
VK6RZ	323/329

Callsign	Countries
VK3JI	322/351
VK6RO	320/327
VK4DV	314/329
VK6LC	312/315
VK4ICU	311/313
VK3DP	305/308
VK7TS	295/296
PY2DBU	294/298
VK2HV	289/000
VK3CIM	284/288
VK6ANC	281/285
VK3DBQ	280/283
UA6LDD	279/280
VK3VQ	276/293
VK3JMB	259/000
VK6MK	256/259
VK8NSB	256/000
VK5UO	251/255
VK2CWS	251/253
VK2FHN	247/000
VK3DQ	246/275
VK4DA	237/239
VK8AM	236/000
VK2BQS	183/186
VK4CXQ	179/000
VK4CHB	177/179
9A4KA	168/000
DL6UGF	161/000
VK5ATU	158/160
VK3VB	153/155
VK6HZ	151/000
VK3JXO	146/000
VK2SPS	144/145
SV1XV	142/144
VK4EZ	140/147
ON9MCR	129/140
VK3OZ	126/127
VK7CQ	123/125
N0MSB	117/000
VK9RS	111/000
VK2AJE	109/000
VK3MRG	109/000
General listing-RTTY	
VK3EBP	253/255
VK3AMK	200/202
VK3DBQ	148/000
VK2BQS	126/128
SP3CUG	124/000
VK5RY	100/102
Gen-listing 6 m. Open	
VK4FNQ	137/000
VK4ABW	109/000
VK6JQ	103/104
VK4CXQ	101/000
Gen-listing-Satellite	
VR2XMT	112/114
VK3XDQ	106/000

The old title of Federal Awards has been changed to "WIA Awards".
"New" to be released in March 2005, "3 & 5 Band DXCC" awards and multi-listing DXCC program.
Awards information and down loadable files are available on our WIA website http://www.wia.org.au/awards/
or email to:awards@wia.org.au or W.I.A. Awards Manager P.O.Box 196. Cannington. Western Australia. 6987.

Mal. VK6LC

AMSAT

Bill Magnusson VK3JT

AO-51 up-link power on 10 m

Many operators have reported that AO-51 seems quite deaf when the 10 metre up-link is switched on. The general comment is that down-link signals are weak despite considerable power being used on 10 metres. Tom Clark W3IWI, one of the driving forces behind AO-51 recently weighed into the debate with this explanation of the configuration of the receive system on board AO-51.

Tom wrote:

"I hope this will clarify the AO-51 ten metre antenna questions. On the "top" of the spacecraft is a single 18" whip antenna fed with semi-rigid 50 ohm coax cable. In the topmost module is a 10 dB off-the-shelf (actually "from my basement" is more correct) Minicircuits ZFDC-series directional coupler that covers (effectively) DC-to-light. The straight-through port of the directional coupler feeds the preamp/power splitter that provides the 2 m uplink facilities. The -10 dB directional coupler tap drives one side of a SPDT coaxial relay, the other side connects to the L-band antenna. The relay arm then drives the "SQRX" receiver (a much modified R-10 ICOM all-mode, all-band handheld scanner) which serves as AO-51's "universal" receiver. If you followed this, you see that the non-resonant whip antenna drives a 50 ohm coupler and receiver and it's not at all surprising that you need a fair amount of transmitter "goo" to make it!"

Thanks for the explanation Tom.

AO-51 switched into store and forward mode for tsunami relief

We've all been appalled by the scale of the natural disaster to our near north and further afield. The AO-51 control team have switched the satellite into digital store and forward mode to facilitate the movement of emergency traffic from the affected areas. All other users have been asked to leave the bulletin board free for this purpose and simply maintain a listening watch on AO-51. At the time of writing I have not seen any emergency traffic but it is early days yet and the drama could be unfolding for months.

AMSAT-NA website re-vamped

If you haven't had a look at the AMSAT-NA web-site recently, you should do so. It's been thoroughly rebuilt and is a credit to those responsible. A very attractive front page leads you to all the essential services that AMSAT-NA and other AMSAT organisations around the globe offer. I have found it to be right up to date and very easy to navigate.

Latest on Keplerian element services

Dr Tom Kelso of "Celestrak" has released his latest update, number-8 on the future availability of Keplerian elements for non-Governmental users - (that's us). He is urging all users to register with a new service called Space Track. You can do this by visiting http://www.space-track.org. Since the announcement was made there has been a lot of discussion generated on the BB on the topic. Many people have had trouble because the element sets as they are downloaded from this new service need some manipulation before they can be used in most of our amateur radio tracking programs. If this situation is resolved by next month's deadline I'll devote some time to it. At the time of writing, Tom's Celestrak keplerian element service is still available and working as normal.

Latest on PCSAT2

Bob Bruninga has appealed for help in monitoring the telemetry on PCSAT2 when it is launched later this year. He wrote "When PCSAT2 is launched in May, we will need some dedicated 9600 baud downlink stations scattered around the world to capture the telemetry during passes and hopefully feed it live via the internet. Or maybe if that doesn't work, to email us a copy every few days. If you are interested in committing to this project, let me know". This would be a most interesting project for those with a permanent internet connection and an automated satellite station. Even if you could monitor the occasional pass and forward the resulting file to Bob via e-mail I'm sure he would be grateful. No doubt we'll hear more of this as the launch date approaches.

Latest six-monthly status update of amateur radio satellites

AO-51 ECHO Catalogue number: 28375

Launch date: June 29, 2004

Status: operational but still testing and commissioning.

Current Mode: PBBS 9K6

Downlink: 435.150 MHz, FM 9600 baud PacSat broadcast Protocol (PBBS)

Uplink: 145.860 MHz FM, 9600 baud PacSat broadcast Protocol (PBBS) Analog voice downlink: 435.300 MHz FM

Analog voice uplink: 145.920 MHz FM 67Hz PL tone

1268.700 MHz FM 67Hz PL tone

Digital Downlinks: 435.150 MHz FM, 38k4 Digital, PBP, 1 watt output

2401.200 MHz FM 38k4 bps, AX.25

Digital Uplink: 145.860 MHz FM, 9k6 Digital, Pacsat Broadcast Protocol (PBP)

Broadcast Callsign: PACB-11

BBS Callsign: PACB-12

International Space Station (ISS) - ARISS

Catalogue number: 25544

Launch date: November 20, 1998

Status: Operational

Current Mode: Packet

Digipeater: Active

Worldwide packet uplink: 145.990 MHz FM

Region 1 voice uplink: 145.200 MHz FM

Region 2/3 voice uplink: 144.490 MHz FM

Worldwide downlink: 145.800 MHz FM

Repeater Uplink: 437.800 MHz FM

Repeater Downlink: 145.800 MHz FM

Russian callsigns RS0ISS, RZ3DZR

USA callsign NA1SS

Packet station mailbox callsign RS0ISS-11

Packet station keyboard callsign RS0ISS-3

Digipeater callsign ARISS

To work out the best times to find someone at the microphone, the ISS daily crew schedule can be found at: http://spaceflight.nasa.gov/station/timelines/

Remember that the crew operates on UTC time.

AO-7 AMSAT OSCAR 7

Catalogue number: 07530

Launch Date: November 15, 1974

Status: Semi-operational in sunlight.

Return to active status: June 21,2002

Uplink: 145.850 to 145.950 MHz CW/USB Mode A

432.125 to 432.175 MHz CW/LSB Mode B

Downlink: 29.400 to 29.500 MHz CW/USB Mode A

145.975 to 145.925 MHz CW/USB Mode B

Beacon: 29.502 MHz, 145.972 MHz, 435.1 MHz, 2304.1 MHz

FO-29 JAS-2

Catalogue number: 24278

Launch Date: August 17, 1996

Status: Operational

Voice/CW Mode JA

Uplink: 145.90 to 146.00 MHz CW/LSB

Downlink: 435.80 to 435.90 MHz CW/USB

Beacon: 435.795 MHz

Digital Mode JD

Uplink: 145.850 145.870 145.910 MHz FM

Downlink: 435.910 MHz 1200-baud BPSK or 9600-baud FSK

Callsign: 8J1JCS

Digitalker: 435.910 MHz

SO-50 SAUDISAT-1C

Catalogue number: 27607

Launched: December 20, 2002

Status: Operational.

Uplink: 145.850 MHz (67.0 Hz PL tone)

Downlink: 436.795 MHz (possibly 5kHz high)

To switch the transmitter on, you need to send a CTCSS tone of 74.4 Hz.

The order of operation is thus: (allow for Doppler as necessary)

1) Transmit on 145.850 MHz with a tone of 74.4 Hz to arm the 10 minute timer on board the spacecraft.

2) Now transmit on 145.850 MHz (FM Voice) using 67.0 Hz to PT the repeater on and off within the 10 Minute window.

3) Sending the 74.4 tone again within the 10 minute window will reset the 10 minute timer.

UO-11 OSCAR-11

Catalogue number: 14781

Launched: March 1, 1984

Status: Semi-operational.

Downlink: 145.826 MHz FM (1200-baud AFSK)

Mode-S Beacon: 2401.500 MHz

More information on UO-11 OSCAR-11 can be found at:

http://www.users.zetnet.co.uk/clivew/

AO-16 PACSAT

Catalogue number: 20439

Launch Date: January 22, 1990

Status: Semi-operational, the digipeater command is on and open for

APRS users.

Uplink: 145.90 145.92 145.94 145.96 MHz FM

(using 1200-baud Manchester FSK)

Downlink: 437.026 MHz SSB (1200-baud PSK)

Mode-S Beacon: 2401.1428 MHz

Broadcast Callsign: PACSAT-11

BBS: PACSAT-12

GO-32 TECHSAT-1B

Catalogue number: 25397

Launch Date: July 10, 1998

Status: Operational but signal weak and subject to deep fading

Downlink: 435.225 MHz FM (9600-baud FSK)

Uplinks: 145.850, 145.890, 145.930 FM

1269.700, 1269.800, 1269.900 FM

Broadcast Callsign: 4XTECH-11

BBS Callsign: 4XTECH-12

NO-44 PCSAT

Catalogue number: 26931

Launch Date: September 30, 2001

Status: Operational but has passed its use-by date

Uplink/downlink: 145.827 MHz 1200 baud AX.25 AFSK via W3ADO-1

Aux/Uplink: 435.250 MHz 9600 baud via PCSAT-2 (off)

APRS Downlink: 144.390 MHz (Region 2)

The following, sadly rather long, list names the amateur radio satellites which are in orbit but are non-operational over VK-ZL at this time.

The list is included here because a number (like AO-10 for example) are possibly experiencing temporary failure due to battery problems when in eclipse. The experience with AO-7 may inspire you to keep a listening watch on the downlink frequencies of these birds in the hope of hearing something. Who knows? You may be the first to report an old satellite springing into life again.

AO-10	NO-45
AO-27 is operational but is not switched on in the southern hemisphere	POSAT-1
	PO-34
	RS-12
	RS-13
AO-40	RS-15
AO-49	SAPPHIRE
CUTE-1	SO-33
FO-20	SO-35
IO-26	SO-41
KO-23	SO-42
KO-25	UO-14
LO-19	UO-22
MO-46	UO-36

Above information courtesy of the AMSAT-NA News Service which is available to all who have ISP access by way of the AMSAT-NA web-site, www.amsat.org.

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The AMSAT group in Australia.

The National Co-ordinator of AMSAT-VK is Graham Ratcliff VK5AGR. No formal application is necessary for membership and no membership fees apply. Graham maintains an e-mail mailing list for breaking news and such things as software releases. Contact Graham if you wish to be placed on the mailing list.

AMSAT-Australia Echolink Net.

The net meets formally on the second Sunday of each month. Anyone with an interest in Amateur Radio Satellites is welcome to join in and take part. Graham VK5AGR acts as net controller. The net starts at 0600 UTC and you can join in by connecting to the AMSAT conference server.

All communication regarding AMSAT-Australia matters can be addressed to:

AMSAT-VK,
9 Homer Rd,
Clarence Park, SA. 5034

Graham's e-mail address is:
vk5agr@amsat.org

Beyond our shores

David A. Pilley VK2AYD
Davpil@midcoast.com.au

Tsunami disaster

Although not publicised much in the national press, amateur radio has played a very important part in the disaster rescue operations, providing communications where no other means was possible. In time, we will no doubt have a full report on the many contributions made by the Radio Amateur fraternity. Many stations monitored the active rescue frequencies, especially around 14,195 and 21,295 kHz and were prepared to offer assistance. It was great to see the discipline by those that kept the frequencies clear. It wasn't just voice communications. PSK31, Packet and CW were involved as well as Echolink. Yes, CW! Every radio amateur should learn it. Here is an example of its need and contribution. Here in Australia Gavin, VK4ZZ, WIA Media co-ordinator and Ken VK4KF who was co-ordinating Queensland kept us up to date by email. There were lots of stations that need praise for their efforts, such as Dr. Sarath, 4S7SW, who operated from the Marthara Hospital in Sri Lanka. There are so many radio amateurs that have given help and I hope they will all be recognised in time.

Permanent ISS ham station

Human crews share fourth anniversary

Four years ago, (November 2) the Expedition 1 crew arrived aboard the International Space Station, home of the first permanent Amateur Radio station in space. Just weeks earlier, the FCC granted the station's distinctive NA1SS call sign. By the time William Shepherd, KD5GSL, Sergei Krikalev, U5MIR, and Yuri Gidzenko arrived on November 2, 2000, the Phase 1 or "initial station" Amateur Radio on the International Space Station (ARISS) gear was already on board for the crew to install. Crew increments comprising US astronauts and Russian cosmonauts have rotated duty tours continuously ever since, and ham radio has played a role in each crew's routine.

"Every challenge for the International Space Station crews, flight control teams and management adds to the knowledge base we need to develop longer spaceflight missions to places like the moon and Mars," said International Space Station Program Manager Bill Gerstenmaier. "The work we're doing on station is directly connected to future exploration missions." ARISS International currently is mulling Amateur Radio's role in NASA's "Moon, Mars and Beyond" initiative.

With NASA's shuttle fleet now grounded, crew increments have shrunk to two people, while duty tours have stretched from four to six months. Despite fewer hands on deck, NASA says the two-person crews sometimes have been able to do more with less--often improvising.

The Expedition 10 crew of Commander Leroy Chiao, KE5BRW, and ISS Flight Engineer Salizhan Sharipov, arrived at the ISS just last month--aboard a Russian Soyuz vehicle, just as the Expedition 1 crew did, although other crews travelled via the shuttle. Over the years, in addition to visiting space shuttle crews, there have even been a couple of paying "space tourists" and other short-term visitors who took advantage of the ARISS gear onboard. More recently, Russian Space Forces Test Cosmonaut Yuri Shargin--who arrived with the Expedition 10 crew--completed two ARISS contacts with school groups in Europe.

The Expedition 10 crew is not expected to begin its own series of school group contacts until the week of November 15 at the earliest. Unscheduled ham radio activity by crew members typically is suspended during crew changeover periods. As of November 4, the NA1SS FM voice repeater remained off and the ARISS Phase 2 equipment was back in packet mode under the RS0ISS call sign.

Chiao cast his vote in the November 2 presidential election while orbiting 230 miles above Earth. A law the Texas State Legislature passed in 1997 allows astronauts to vote electronically from space. Chiao submitted his electronic ballot to his county clerk's office via e-mail.

Some statistics: Since the Expedition 1 crew carried out the first successful ARISS school group contact--with Luther Burbank Elementary School near Chicago on December 21, 2000--ISS crews have racked up 150 similar Amateur Radio contacts. Approximately two-thirds of them have been direct, 2-metre QSOs, while the rest were carried out via "telebridge" stations, where two-way audio was teleconferenced to the school via an Earth station convenient to QSO NA1SS directly.

The crew holding the record for the most ARISS school group contacts was Expedition 3. Commander Frank Culbertson, KD5OPQ, answered questions via ham radio posed by students at 22 different schools. Culbertson also activated NA1SS during the 2001 Jamboree On The Air (JOTA) scouting event.

NASA recently announced that after an extensive review, it's planning its return-to-flight shuttle mission, STS-114, for a launch window that opens next May. ARISS International Chairman Frank Bauer, KA3HDO, says PCSat 2, an externally mounted ham radio payload, is expected to fly on that shuttle flight, which also will mark the return of three-person ISS crews. "We will also be able to better negotiate the delivery of our computer, which is essential for the SSTV system," Bauer added. Some information from NASA.

(ARRL N/L 23/44)

Israel to drop CW requirement

Back on Earth, word is that the state of Israel may be the next nation to do away with Morse testing. At least the possibility has been raised in the latest issue of the Israel Amateur Radio Club's English language publication Hagal International.

In a brief statement in the latest on-line edition, the magazine says that a proposal to abandon Morse testing has been raised by the nation's Ministry of Communications. The publication notes that many European countries have been dropping the Morse requirement and that it expects to see a rather heated discussion among Israeli hams once the

Frederick Bernard Freer VK2GAE

1916 - 2004

Many will be saddened to hear of Fred's death on the 5 September 2004 at West Kempsey

Fred studied for his Commercial Operator's Certificate of Proficiency at the Marconi School of Wireless, Sydney around 1936. Having obtained this, he joined AWA Ltd's Marine Department and went to sea as a Radio Officer in the Australian Merchant Navy.

Very soon Fred, like many others, found themselves involved in WW2. During this period he served on various ships. The one he remembered best was the m.v.Neptuna. He was in Darwin at the time and had just been transferred to another ship. Just after that, on 19 February 1942, the Japanese raided Darwin and scored two direct hits on the Neptuna which was carrying ammunition, tore her apart, killing the Captain and 45 crew.

After the war, Fred joined Radio Corporation (Astor Radio) Sydney and headed their service department. Some years later he set up his own radio service business, Bonelec, at Bondi. He later moved to Newcastle, still repairing radios and into TV. In 1976 he moved to West Kempsey NSW with the idea of retiring but knowing Fred, he still did some fixing for all his friends. His final piece of work was the restoration of a Weldon console radio.

Twenty years ago, he took up learning to play the electronic organ, his wife Joyce being his tutor. Fred didn't apply for his amateur radio station licence until 1989.

I have to thank Fred a lot. My first job also was at Radio Corporation in 1945 after WW2.

Fred was the boss of the workshop. I was going to go to the Technical College to be a service mechanic. Fred talked me into going to the Marconi School, get my Commercial ticket and go to sea. I did that!

After that I lost contact with Fred for 35 years, found out that he was in Kempsey and paid him a visit. He also talked me into obtaining my amateur station licence in 1997. Since then, until recently, we have had regular Saturday morning HF skeds on 7 MHz.

Our sympathy to Fred's family and to Joyce. He will be missed.

Ted Miles VK2FLB

Beyond our shores *continued*

Ministry opens the debate for public discussion.

At the moment Israel maintains a 5 word per minute Morse testing requirement for access to the High Frequency bands. But it is also a signatory to the pan-European CEPT licensing agreement and tends to abide by whatever regulations CEPT adopts for its member nations.

More on what's happening in Israeli ham radio is on line at www.iarc.org (Hagal International)

(ARNewsline)

Iraq

Open Echolink node in Baghdad

Ian Abel, G3ZHI, reports that an Echolink node is now on the air in Iraq. Its call sign is YI1IRQ dash l with a node number of 209608. It can be found operating on 144.225 MHz and covers most of the city of Baghdad.

(ARNewsline)

Great Britain

5 MHz beacons on air

The Radio Society of Great Britain says the two new beacons on 5290 kHz are now active. The new beacons operate under the callsigns GB3WES and GB3ORK. GB3WES is located in Cumbria and GB3ORK in the Orkney Islands. Both will have a stepped transmit power sequence and a 30-second sounder sequence of 0.5ms pulses at 40 Hz and identical to that of the Oxfordshire GB3RAL beacon.

The new beacons have transmit times to follow GB3RAL by one and two minutes respectively. Together the three beacons will provide an excellent spread of signal source from across Great Britain and offering experimenters worldwide a unique opportunity to study propagation effects at 5 MHz from their own QTH. Reports are welcome and further information on how to file them is available on the RSGB Spectrum Forum website at www.rsgb-spectrumforum.org.uk/5Mhz.htm

(GB2RS)

U.S.A.

Dayton Ohio

Hamvention 2005 is slated for May 20th to the 22nd at the Hara Arena in the Dayton suburb of Trotwood, Ohio. Time to make your travel plans and book your air ticket now.

Trivia

Emerging technology: 25% of Earth's inhabitants are wireless telephone subscribers

Not amateur radio, but perhaps interesting to those that use hand-held transceivers!

Science On-Line reports that the worldwide population of wireless telephone subscribers in now estimated to be almost 1.5 billion. That's roughly about one quarter of the world's population. Subscribers have doubled in the past five years, and the fastest growth is now occurring in China, India and Russia.

(Science OnLine)

Wadda Cup 2004

And the winner of the old mug is...VK3EK!

Vince Henderson, VK7VH
Contest Manager

The Central Highlands Amateur Radio Club of Tasmania (CHARCT) 2004 80m Dash for the Wadda Cup Contest and trophy has been won by Rob Ashlin, VK3EK. Rob is no stranger to contesting and now counts the Wadda Cup among the growing list of contests that he has conquered. Rob came close to winning the cup in 2002, finishing second. It was also a near miss in 2003, as Rob finished third.

Rob wins the 2004 Wadda Cup trophy, a replica of the trophy (to keep for all time) and first place certificate.

Rob said "I never thought that I had a chance. It was nail-biting stuff waiting for the scores during the call back."

Rob was pleased with the win. "I have been involved with the Central Highlands Amateur Radio Club of Tasmania for many years. They are a great bunch of people and winning the Club's Wadda Cup Contest is a great honour."

Congratulations Rob on a fine win and we look forward to hearing you next year as the on air coordinator and operator of VK7CHT/3.

In second place with a great score of 30 points was Len Steel, VK3FB. Len was only just beaten to the post for first place. Len will receive the Wadda Cup second place certificate. Well done Len.

Third place was won by Frank Clark, VK7CK. In Frank's words "I have been fiddling around with radio for the last 20 years. I am most pleased with my result and I hope to have a go next year." Frank will receive the third place certificate. Congratulations Frank.

The Short Wave Listener part of the event may have had participants but no logs were received. We hope that this will not be the case next year and while it is disappointing that no SWL entries were received, we will continue this section of the Wadda Cup Contest.

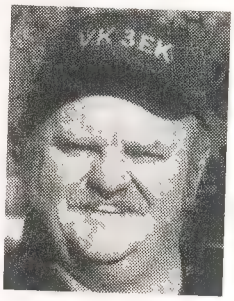
The contest was held on Saturday evening, 23 October 2004. Conditions during the contest were generally very good. Most operators were receiving strong signals. There were some steady static crashes during the event and this made contact between distant stations a little difficult. The pace during the first half hour of the contest was fast and furious. Finding stations during the last half hour was a little more difficult. The event is meant to be friendly and fun. It turned out to be just that as many people commented that the Wadda Cup Contest is their favourite event, full of friendly people and heaps of fun.

The contest call back was held on 3.585 MHz immediately after the contest concluded. It was very well supported, considering the number of stations that participated in the score roll call. There were many stations, making just a few contacts, who did not participate in the call back. We thank them for joining in the contest. If you do have a go at the 2005 contest, even if you make just a few contacts, we encourage all stations to give their score during the on air score call back. The score call back is unique to the Wadda Cup Contest and as far as we know, it is the only contest in the world that has this type of format.

VK7CHT/5 (CHARCT club call sign) was operated by Tom Aubrey, VK5EE. Tom stood in for Kevin Johnston, VK5KJ, the winner of the 2003 event, operating the club call of VK5SR. Unfortunately Kevin had a last minute engagement and we thank Tom for stepping in to operate the CHARCT call sign on behalf of Kevin.

We also thank Tom Aubrey and Paul Linsley, VK2BPL, for their relay assistance during the contest call back. This ensured that we had reasonable coverage, for gathering contest scores, around Australia.

To make sure that The Wadda Cup continues to be on the Australian contest calendar, CHARCT will always encourage comments from participants on how the rules could be improved. A number of suggestions were received after the 2004 event. Some of the changes that may be made to the 2005 event include changing the contest date to mid September. This may overcome some of the static crashes we experienced during the last event. Also, and probably more important, a change to September will make life a little easier for Tasmanian stations. This will make the contest start time the same along the eastern seaboard. No more daylight saving time problems!



Rob Ashlin VK3EK

The 2005 event will also allow for the recording of contacts in local time or UTC. If you have a suggestion, please do not hesitate to send it to the contest manager. Look for all the changes to the 2005 Wadda Cup Contest in the 2005 rules. We expect that the rules will be available on the CHARCT web site (http://charct.net) during February 2005.

To all who took part in the 2004 Wadda Cup Contest, CHARCT says thank you. Your participation is the reason that the event is becoming so popular. To all that missed the contest and are just finding out that a contest can be a fun event, we hope to hear you next year.

Until next year, happy contesting.

ar

2004 Wadda Cup Contest results

VK3EK	32 *	VK3HAP	22
VK3FB	30 **	VK5HBH	22
VK7CK	29 ***	VK2LCD	20
VK7TS	28	VK5KBJ	20
VK3JPP	27	VK7HAR	20
VK3MGZ	26	VK7IL	18
VK2BPL	26	VK5DP	18
VK5SR	26	VK3MMM	16
VK7CHT/5	26	VK3BTV	14
VK7VH	25	VK3ZDR	13
VK7TW	25	VK3UCK	10
VK3HGK	24	VK2BQS	6
		VK2JHN	3

* = 1st place Certificate and Trophy
** = 2nd place Certificate
*** = 3rd place Certificate

Contests

Ian Godsil VK3JS

Contest Calendar February – April 2005

5/6	Feb	10-10 Intl. Winter Party	(SSB)
5/6	Feb	Mexico Intl/ RTTY Contest	(RTTY)
12/13	Feb	CQ WW RTTY WPX Contest	(RTTY)
13	Feb	Asia-Pacific Sprint Contest	(CW 80/40m)
26/27	Feb	ARRL Intl. DX Contest	(CW)
26/27	Feb	Russian PSK WW Contest	(PSK31)
26/27	Feb	REF DX Contest	(SSB)
5/6	Mar	ARRL Intl. Contest	(SSB)
12/13	Mar	RSGB Commonwealth Contest	(CW)
19/20	Mar	John Moyle Field Day	(CW/SSB/FM)
19/21	Mar	BARTG HF RTTY Contest	(RTTY)
19/21	Mar	Russian DX Contest	(CW/SSB)
26/27	Mar	CQ WW WPX Contest	(SSB)
9/10	Apr	JA Intl. DX Contest	
22	Apr	Harry Angel Sprint (CW/SSB/FM)	

Greetings to all readers and I hope that you are preparing for a new contest year.

Firstly my apologies for the lateness of the 2003 CQWW results below. They only arrived with me late in November.

I hope that by the time that you read this there will be a complete list of not only Contest events, but other AR activities, posted on the WIA web site. Obviously, the availability of such a list should help clubs to co-ordinate their special events during the year. So, if your Club has planned something for later in the year, but it does not show in the list, please ask someone to get the information to the Federal Web Master for inclusion.

Results 2003 CQ WW CW Contest

(VK only Call\band\score)

VK6AA	All	5,933,760
VK4UC	"	5,880,005
VK4AN	"	1,799,175
VK6DXI	"	1,294,083
VK7GN	"	982,163
VK3IO	"	237,326
VK4BUI	"	46,706
VK4WPX	"	5,151
VK2DPD	"	383,702
VK2KM	"	114,680
VK6HG	"	110,259
VK2AR	"	60,455
VK4TT	"	38,760
VK1BL	"	910
VK6LW	7	610,067
VK4DX	14	304,437
VK2IMM	28	22,936
VK9CJ	All	463,250

Results 2003 CQ WW SSB Contest

(VK only Call\band\score)

VK2IA	All	754,614
VK7GN	"	142,854
VK3IO	"	77,400
VK6HZ	"	69,300
VK4EJ	"	375,320
VK3DBQ	"	18,012
VK8AV	"	14,162
VK6DXI	"	3,698
VK5EMI	"	1,326
VK5UE	"	850
VK1KMB	"	442
VK4WPX	28	107,909
VK4AN	21	211,888
VK4FJ	"	7,920
VK6KK	14	5,184
VK2AAC	"	4,879
VK6LW	7	186,878

Results RD Contest 2004

From Alek VK6APK, Contest Manager

VK6 Premiers in 2004!

For the third year running, the RD Contest trophy has been won by VK6

VK6 is the most isolated of the Australian states and as a result, those who live there have to work just that little bit harder. This was certainly the case for the 2004 RD Contest. There was tremendous enthusiasm and a strong desire to put in a winning effort again this year. Congratulations to all who participated and made the win possible.

As usual, the task of checking logs and collating results was made very easy by the high standards of submitted logs.

Here are the results for the contest.

State Scores

Table 1 shows the placing of each state along with their Overall Scores.

Table 1: State Ladder

1st	VK6	1.449
2nd	VK7	1.077
3rd	VK4	0.743
4th	VK5/8	0.620
5th	VK3	0.499
6th	VK2	0.402
7th	VK1	0.195

The total scores in both HF and VHF are shown in Table 2.

Table 2: State QSO Totals

State	HF	VHF
VK1	228	0
VK2	3025	4
VK3	2422	850
VK4	2047	1429
VK5/8	3047	508
VK6	1676	11908
VK7	1276	1118

For those who wish to know how the "Overall Score" for each division is calculated, I have included the following live example of how it is done. I will use VK3's figures in the calculations. The overall score is the average of both the HF and VHF "Improvement Factors"

Formula:

Improvement Factor = 2004 Points divided by 2004 Benchmark

Calculations:

HF

2422 / 2978 = 0.8133

VHF

850 / 4581 = 0.1855

The two improvement factors are now averaged to give the division's final result.

Formula:

Overall Score = (HF Improvement + VHF Improvement) / 2

Calculation:

Overall Score = (0.8133 + 0.1855) / 2

Overall Score = 0.9988 / 2

Overall Score = 0.499

Here are the Benchmark figures for the year 2005. This table will also appear in the rules for 2005. The formula for determining these values is:

2005 Benchmark = (0.25 x 2004 Score) + (0.75 x 2004 Benchmark)

Once again, using VK3 as an example.

2004 Benchmarks.

(As published in 2003 results and 2004 rules)

HF 2978

VHF 4581

2004 Scores.

HF 2422

VHF 850

Formula:

2005 Benchmark = (0.25 x 2004 Score) + (0.75 x 2004 Benchmark)

Calculations:

HF

2005 Benchmark = (0.25 x 2422) + (0.75 x 2978)

2005 Benchmark = 605.5 + 2233.5

2005 Benchmark = 2839

VHF

2005 Benchmark = (0.25 x 850) + (0.75 x 4581)

2005 Benchmark = 212.5 + 3435.75

2005 Benchmark = 3648

Those 2 benchmark figures are the scores that the state needs to beat, in 2005, to register a positive improvement factor in each section of the contest.

Table 3: 2005 Benchmarks

State	HF	VHF
VK1	497	119
VK2	3688	99
VK3	2839	3648
VK4	2914	1623
VK5/8	3187	1410
VK6	2061	7164
VK7	1507	901

From these Benchmark totals it can be seen that it is quite possible for any state to win next year's contest.

The following table shows the total number of logs received over the last 5 years. * Denotes winning state.

Table 4: Logs

State	2000	2001	2002	2003	2004
VK1	9	15	8	8	3
VK2	41	41*	25	41	40
VK3	137	57	57	43	52
VK4	78*	40	53	76	50
VK5/8	46	51	54	41	45
VK6	59	47	72*	74*	90*
VK7	41	24	27	17	32
Total	**411**	**275**	**296**	**300**	**312**

Individual Scores

The individual scores for entrants are listed below. Certificate winners are denoted by an asterisk (*) and the top Australian scores in each section by a hash (#). Multi operator certificate winners are denoted by (M). Certificates will be issued to the top operators in each division as deemed by the contest coordinator. Where a multi operator station holds the top score, a certificate will also be issued to the top scoring single operator in that section. Where a single operator station holds top place, only that station will receive a certificate.

VK1

HF Phone

TMS	14

HF CW

ENG	100*

HF Open

AI	114*

VK2

HF Phone

XZ	317*
XT	185
TS	175
HFM	102
VV	99
DF	75
KUZ	64
ZQX	59
ZEN	51
IRP	45
ASU	43
MB	41
YW	40
ZZF	21
CZ	20
HPM	20
LCD	20
JHN	19
KEA	18
ZRM	16
TWB	13
AYL	12
BT	11
BUI	11
JTV	11
ALV	10

HF CW

GR	122*
BHO	120
KM	114
EL	90
AWD	54
WL	46
RJ	40
AUC	8

HF Open

BO	313*
BPL	296
AYD	230
YN	94

VHF Phone

TWB	2
ZEN	2

VK3

HF Phone

SY	365*
AHY	154
AVV	BSF
JK	117
EK	106
FDX	102
DET	101
KTQ	84
NA	70
AMW	61
JSS	59
BCZ	57
KMB	57
DY	56
SM	50
EA	42
ADW	38
ATN	29
AKT/4	26
HAP	25
AAM	24
HFS	24
IT	13
KCD	12
KQB	11
UBM	9
XH	2

HF CW

ANJ	92*
JS	87
BKU	64
KS	62
AMD	30
GDM	18

HF Open

ACR	47
AQ	26
US	26
ZYG	26

VHF Phone

EA	120*
HFS	97
BBA	96
CH	95
JK	84
XJU	61
XH	42
JS	40
XKU	15
BSF	7

VHF Open

ACR	66*
AQ	43
US	42
ZUG	42

VK4

HF Phone

BAY	199*
WIT	188
ADC	144
FNQ	109
AQD	90
JEW	83
APE	70
BTW	58
XES	49
ZA	35
TE	42
TLB	35
KML	31
ZGQ	31
TKA	28
FU	25
MC	21
PS	21
ACC	20
TJS	15
PJ	14
AA	11
BSH	11
PZ	11
DO	10
GM	10
KJD	7

HF CW

XA	172*#
BUI	108

HF Open

WIL	376*#
GZ	23

VHF Phone

AML	280*
AA	203
JEW	131
ADC	129
ZBV	116
3CE/4	95
ZGQ	72
ZA	67
WIT	65
HSV	59
FNQ	44
TJS	43
APE	39
ZM	20
EV	17
PJ	17
MC	16
BAY	12
TLB	4

VK5/8

HF Phone

AY	419*#
UBC	377
BP	247
BWH	228
KCX	216
DJ	129
YX	115
WO	108
AIC	101
HRW	100
VE	90
SN	83
AIM	80
NN	75
RV	64
KMC	52
ASN	38
OQ	35
TW	35
MX	24
UE	20
ZQ	15
OF	14
TY	12
8ZJZ	11
ZFW	10

HF CW

ATU	148*
UM	94
HO	86

HF Open

RG	21

VHF Phone

MX	74*
UBC	72
AIM	71
ZKK	54
KMC	53
KLD	35
AIC	26
AVQ	26
SE	25
OF	19
YX	17
ATQ	16
AR	12
ZFW	5
OQ	3

VK6

HF Phone

VZ	204*
ADI	149
CSW	138
HZ	127
KK	117
TQ	111
JP	85
BRN	83
CB	79
CG	64
DI	51
APK	50
NU	49
ZN/4	42
AB	25
ND	22
RZ	15
MDS	14
FJA	11
TRA	10
KH	9
EH	4
USB	1

HF CW

AFW	112*
AJ	66

HF Open

NX	38

VHF Phone

XRE	607*#
ZAR	530
ANC	484
JIP	484
ND	484
ZBP	484
XAA	466
CSW	409
NX	392
TVI	324
TNT	322
HST	317
UHF	314
FJA	285
NU	266
KEN	255
AD	229
HU	229
SAA	228
HGR	220
JP	216
XCJ	205
USB	191
IQ	187
TAA	184
BDO	171
SAR	169
TRA	158
KAD	155
SCS	155
SH	155
WI	155
WIA	155
ZKO	152
CX	151
APK	140
KHZ	132
KW	120
BW	101
LZ	97
KWT	87
SMH	78
NCE	70
ACT	64
ARO	64
CRO	64
RO	64
SIX	64
AXB	60
ZLZ	58
APW	53
JRC	53
UT	50
WU	48
YF	48
YJ	48
YGQ	47
ZIC	45
EH	42
OE	33
TS	32
KTN	11
JGF	10
RZ	10

VHF Open

DXI	203*#
HK	24

VK7

HF Phone

GN	373*
CK	275
VH	224
TW	140
KDO	54
RM	39
IF	33
ZGK	30
KC	30
XRN	18
CHT	13
HDM	13
HDX	13
ZJA	11
HAH	10

VHF Phone

ZBX	169*
KDO	131
HAF	121
ZGK	121
RR	113
TW	85
RM	67
HDM	49
DG	47
CHT	43
VH	43
JGD	34
JK	30
KK	30
XRN	19
PP	13
IF	3

Short Wave Listener

Reddam House High School Radio Club 336*#

Overseas

ZL2ADN	HF Phone	31
ZL1ALZ	HF Open	273*

This has been my eleventh year as RD Contest Coordinator. I am happy to say that it has been a great pleasure to do the job for each of those years. The greatest joy each year, has been reading the notes and comments of both old timers and newcomers who had fun in the contest.

In 2005, Chris, VK4AA will take on the role as Contest Coordinator. I wish him well and I'm sure he will tackle the task with great enthusiasm.

73, Alek. VK6APK

John Moyle Field Day Contest 2005

Presented by Denis Johnstone VK3ZUX

19 - 20 March, 2005
0100 UTC Sat– 0059 Sun

Overview

1. The aim is to encourage and provide familiarisation with portable operation, and provide training for emergency situations. The rules are therefore designed to encourage field operation.
2. The contest takes place on the 3rd full weekend in March each year, and runs from 0100 UTC Saturday to 0059 UTC Sunday, 20-21 March, 2004.
3. The contest is open to all VK, ZL and P2 stations. Other stations are welcome to participate, but can only claim points for contacts with VK, ZL and P2 stations.
4. Single operator portable entries shall consist of ONE choice from each of the following (e.g. 6 hour, portable, phone, VHF/UHF):
   a. 24 or 6 hour;
   b. Phone, CW, or All mode;
   c. HF, VHF/UHF or All Band.
5. Multi-operator portable entries shall consist of ONE choice from each of the following (e.g. 24 hour, portable, phone, VHF/UHF):
   a. 24 or 6 hour;
   b. Phone, CW, or All mode;
   c. HF, VHF/UHF or All Band.
6. Home and SWL single operator entries may be either 24 hour or 6 hours, All mode, All band.

Scoring

7. Portable HF stations shall score 2 points per QSO.
8. Portable stations shall score the following on 6m:
   a. 0-49 km, 2 points per QSO;
   b. 50-99 km, 10 points per QSO;
   c. 100-149 km 20 points per QSO;
   d. 150-199 km 30 points per QSO;
   e. 200-499 km 50 points per QSO;
   f. 500 km and greater, 2 points per QSO.
9. Portable stations shall score the following on 144MHz and higher:
   a. 0 to 49 km, 2 points per QSO;
   b. 50 to 99 km, 10 points per QSO;
   c. 100 to 149 km, 20 points per QSO;
   d. 150 km and greater, 30 points per QSO.
10. For each VHF/UHF QSO where more than 2 points is claimed, either the latitude and longitude of the station contacted or other satisfactory proof of distance must be supplied.
11. Home stations shall score:
    a. Two points per QSO with each portable station.
    b. One point per QSO with other home stations.

Log Submission

12. For each contact: UTC time, frequency, station worked, RST/ serial numbers sent / received and claimed score. (VHF and above location of other station and distance.)

Logs must be accompanied by a summary sheet showing: callsign, name, mailing address, section entered, number of contacts, claimed score, location of the station during the contest, and equipment used, and a signed declaration stating "I hereby declare that this station was operated in accordance with the rules and spirit of the contest and that the contest manager's decision will be accepted as final". For multi-operator stations, the names and callsigns (legible) of all operators must be listed.

13. Paper logs may be posted to "John Moyle Contest Manager,

    Alternatively, logs may be e-mailed to: jmfd2004@wia.org.au

    Please submit logs in the following formats ONLY: ASCII text (*.txt), or MS Word (*.doc).

    Logs sent by disc or e-mail must include a summary sheet and declaration, but the operator's name (legible) is acceptable in lieu of a signature.

    Logs must be postmarked no later than 29 April, 2005

Certificates and Trophy

14. At the discretion of the Contest Manager, certificates will be awarded to the winners of each portable section. Additional certificates may be awarded where operation merits it. Note that entrants in a 24 hour section are ineligible for awards in a 6 hour section.
15. The Australian portable station, CW section, with the highest CW score will be awarded the President's Cup, a perpetual trophy held at the National Office, and will receive an individually inscribed wall plaque as permanent recognition.

Disqualification

16. General WIA contest disqualification criteria, as published in Amateur Radio from time to time, apply to entries in this contest. Logs which are illegible or excessively untidy are also liable to be disqualified.

Definitions

17. A portable station comprises field equipment operating from a power source, e.g. batteries, portable generator, solar power, wind power, independent of any permanent facilities, which is not the normal location of any amateur station.
18. All equipment comprising the portable station must be located within an 800 m diameter circle.
19. A single operator station is where one person performs all operating, logging, and spotting functions.
20. A single operator may only use a callsign of which he/she is the official holder. A single operator may not use a callsign belonging to any group, club or organisation for which he/she is a sponsor except as part of a multioperator entry.
21. A multioperator station is where more than one person operates, checks for duplicates, keeps the log, performs spotting, etc.
22. A multioperator station may use only one callsign during the contest.
23. Multioperator stations may only use one transmitter on each band

at any one time, regardless of the mode in use.

24. Multioperator stations must use a separate log for each band.
25. A station operated by a club, group, or organisation will be considered to be multioperator by default.
26. None of the portable field equipment may be erected on the site earlier than 28 hours before the beginning of the contest.
27. Single operator stations may receive moderate assistance prior to and during the contest, except for operating, logging and spotting. The practice of clubs or groups providing massive logistic support to a single operator is, however, totally against the spirit of the contest. Offenders will be disqualified, and at the discretion of the manager, may be banned from further participation in the contest for a period of up to 3 years.
28. Phone includes SSB, AM and FM.
29. CW includes CW, RTTY, and packet.
30. It is not expected that any other modes will be used in the contest, but if they are, they shall be classed as CW.
31. All amateur bands may be used except 10, 18 and 24 MHz. VHF/UHF means all amateur bands above 30 Mhz. Note: On 50 MHz, the region below 50.150 has been declared a contest free zone, and contest CQs and exchanges may only take place above this frequency. Stations violating this rule will be disqualified.
32. Cross-band, cross-mode and contacts made via repeaters are not permitted for contest credit. However, repeaters may be used to arrange a contact on another frequency where a repeater is not used for the contact.
33. Stations may make repeat contacts and claim full points for each one. For this purpose, the contest is divided into eight consecutive three-hour blocks: 0100-0359. 0400-0659. 0700-0959; 1000-1259; 1300-1559; 1600-1859; 1900-2159; 2200-0059 UTC. If you work a station at 0359 UTC a repeat contact may be made after the start of a new block providing, they are not consecutive or are separated by five minutes, since the previous valid contact with that station on the same band and mode.
34. Stations must exchange ciphers comprising RS(T) plus a 3 digit number commencing at 001 and incrementing by one for each contact.
35. Portable stations shall add the letter "P" to their own cipher, eg. 59001P.
36. Multioperator stations are to commence each band with 001.
37. Receiving stations must record the ciphers sent by both stations being logged. QSO points will be on the same basis as for Home Stations, unless the receiving station is portable.
38. The practice of commencing operation and later selecting the most profitable operational period within the allocated contest times is not in the spirit of the contest, and shall result in disqualification. The period of operation commences with the first contact on any band or mode, and finishes either 6 or 24 hours later.

ar

Special event

Special call : II3CC
Location : Trento, ITALY
XVI National Meeting ANC
Associazione Nazionale Carabinieri
Period : 0700 UTC 15 April 2005 to 1900 UTC 17 April 2005
Band : 80 - 40 - 30 - 20 - 17 - 15 - 12 - 10 - 6 SSB, CW, RTTY, PSK31, SSTV.

Log on line on http://www.cota.cc
QSL Manager : IZ8DDG Orlando Balisciano, Via Villa Bisignano V Traversa no. 21, Napoli, ITALY 80147
C.O.T.A. Carabinieri On The Air
Associazione Carabinieri Radioamatori
Via S. Soprani 5/C
60022 Castelfidardo (AN) Italy
call sign IQ6CC

IZ6FUQ Stefano Catena

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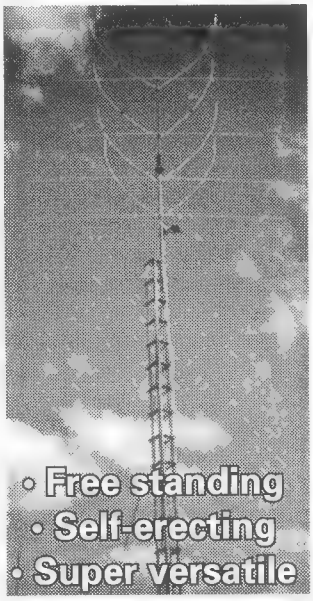

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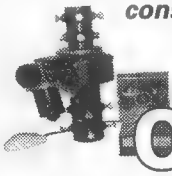

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Kev Peacock VK4KKD

VHF/UHF – an expanding world

David Smith VK3HZ – vk3hz@wia.org.au
Leigh Rainbird VK2KRR – vk2krr@telstra.com

Weak signal

David Smith - VK3HZ

Welcome back from the holiday break. I hope you all enjoyed the festive season and made the most of any time off to enjoy your hobby.

While we have a break from our writing, unfortunately the bands do not. In fact things are probably at their busiest over the period just passed.

Sporadic E openings on 2 m seem to have been plentiful so far. On the afternoon of 20/11 Robbie VK3EK worked VK4ADM. Then on 8/12, Nick ZL1IU reports working VK4AFL, VK4ZDX and VK4LC on 2 m. Nothing was heard on 70 cm, but CH5A in Newcastle was very strong.

On the evening of 22/11, 2 m opened across the Bight from VK6 to VK5 and VK3 for the only time so far this summer. Wally VK6WG in Albany managed to work VK5AKK, VK5UBC, VK5ZK, VK5DK, VK3ZQB and VK3II. He was also heard by VK3HZ and VK3YB.

I must apologise that the deadline and holidays have beaten me this month, so I will have to defer the full report on the rest of the Weak Signal happenings until next month.

Please send any Weak Signal reports to David VK3HZ at vk3hz@wia.org.au.

Digital Modes

Rex Moncur – VK7MO

Joe Taylor K1JT has provided an update on progress with JT1. As advised earlier, JT1 uses phase modulation and promised about 5 dB improvement over JT65. It was also aimed at contest operation as, with only a few Hz bandwidth, stations could operate within the same SSB pass band and work different stations by clicking on the different signals on a waterfall display. Well all that was based on computer simulations. In the real world of tropo-scatter and EME, things have not proved so easy, as tropo-scatter multi-path and EME libration both produce significant phase modulation, which substantially reduces performance. Joe now thinks JT65 might be as good as he can get. He is now looking at a modified JT65 with fewer tones and narrower bandwidth that he hopes might be useful for contest operation.

Adrian VK2FZ and Rex VK7MO completed what is believed to be the first VK 70 cm meteor scatter contact using FSK441A during the Geminids meteor shower on 14 December 2004. Adrian received 3 burns of over a second within an hour of operation while Rex received only pings with the best being 360 ms. The distance of 1072 km is a little short of optimum which is around 1400 km. The tests show that during meteor showers it is well worth trying 70 cm particularly for stations in the range 1200 to 1800 km.

Phil VK4CDI has been seen on FSK441 in Hobart and completed his first EME contact using JT65. Guy VK2KU is operational at his new QTH and rapidly adding to his grid square tally using JT65. At last count he was only one short of the magic 100. Rod VK2TWR is working regularly into Hobart on tropo-scatter using JT65 with signals averaging -24 dB and peaking to -11 dB when the Sydney to Launceston aircraft provide enhancement.

And finally, congratulations to Bob ZL3TY who has set a new 2 m EME World Record of 19,296 km. On the evening of 14 December 2004, he worked F8FHP using JT65b.

Please send any Digital Modes reports to Rex VK7MO at rmoncur@bigpond.net.au.

2 m & 70 cm FM DX

Leigh Rainbird - VK2KRR

In this edition of the 2 & 70 FM DX report we cover the months lost to the Christmas break, which was November and December. Nothing startling to report really but a few interesting openings nonetheless.

Mike VK4MIK reports that on the 3rd of December he was able to work to VK4RMK, Mackay 535 km at 0620 local time - contacts Eric VK4EDN and Wal VK4AIV. Felix mentioned that Hayman Island VK4RDC was there in the Whitsundays (451 km) so he tried it and worked David VK4DJC through there. Hepburn predicted a possible opening to PNG but unable to make a contact.

On the morning of the 5th of December, Karl VK7HDX worked his furthest FM simplex contact on 2 m. This was across the Bass Strait to Chris VK3VSW in Geelong. Karl states "The signal was S2 but the audio was almost noise-free and very light QSB. Chris called "CQ" again on 146.500 so I answered his call, to my surprise he heard me. We had a brief contact then conditions changed". The distance for Karl's contact was 430 km and was Karl's first interstate contact.

From mid to late December in the SE, there were a few openings where 70 cm was running as good as 2 m and sometimes even better.

The 17th of Dec, I had good signals here from most of VK3, except extreme eastern areas. Stand out repeaters on 70 cm were – Grampians S9+40 at 471 km; Ballarat S9+40 at 378 km. On 2 m, Otway Ranges was S9 at 486 km; surprisingly Naracoorte in VK5 was punching through with an S9+60dB signal at 600 km.

Again in the morning of the 22nd of December, 70 cm conditions were most outstanding. The Barossa Valley SA 70 cm repeater peaked at 60dB+. Barossa

Robin L. Harwood VK7RH

Disaster brings shortwave into its own

The last days of 2004 became horrific when a massive earthquake off Sumatra, which measured 9.0 on the Richter scale, generated huge tsunamis, affecting over 12 Indian Ocean nations.

The first news filtered in and as the scale of the disaster became apparent, the electronic media scrambled to extensively cover it. Shortwave came into its own as the telecommunications infrastructure was severely disrupted. You will read elsewhere in this magazine of the heroic efforts rendered by ham radio operators to maintain emergency communications, particularly in Sri Lanka and Indonesia.

The BBC World Service quickly pre-empted its normal programming to extensively cover this and the majority of other broadcasters quickly followed. I also heard Radio Thailand on the 30th of December at about 2040 on 9535. They were rebroadcasting an English news bulletin recorded 12 hours earlier, concentrating on the Phuket relief efforts. Bangkok is scheduled to broadcast to Europe at this time.

The small Andaman and Nicobar Islands were particularly hit hard and at the time a Dxpedition was underway. The operation quickly became an emergency communications station, concentrating on relaying health and welfare traffic between the Indian mainland and Port Blair. I personally did not hear the station yet the broadcast station of All India Radio in Port Blair was heard worldwide as it is in the 90-metre tropical broadcasting allocation on 4760, fading in here at about 1200. Press reports say that this AIR station provided a vital role in linking up displaced persons as well as having essential information.

Banda Aceh was also severely hit by the earthquake and following tsunami. Up to then, this province was off-limits to the World because of a long running civil war. Telecommunications were destroyed and HF radios were initially used to maintain contact between Banda Aceh and the rest of Indonesia. I noticed that there was quite an upsurge in traffic all over the HF bands in Indonesian. I do not know if it all was related to emergency communications. Some of it apparently was not but I did hear an extremely busy YB emergency amateur net on 7055 LSB most nights. Their net discipline was superior to the hundreds of non-amateur Indonesian HF nets.

Propagation at the height of this disaster was very poor and we are very close already to the low point in the Solar Cycle. Signals above 18 MHz are becoming rarer with the 10 metre amateur band virtually dead. I have seen reports that this cycle will take longer than normal to bounce back.

Kol Israel has been broadcasting announcements that they intend to cease shortwave broadcasting on the 27th of March, which is the end of the B-04 period. Yet we have heard this before and always at the last minute, Kol Israel is reprieved. Will it happen this time? Incidentally Radio Slovakia got a temporary reprieve and will continue to the end of July. However Radio Vlanderen International in Brussels will cease external broadcasting at the end of March, although a relay of its domestic program in Flemish will be beamed to central Europe.

In December there was quite an increase in broadcasts in Ukrainian, following the election re-run. One station had originally scheduled to cease broadcasting via shortwave in Ukrainian yet with the volatile situation on edge, opted instead to continue indefinitely. The situation is still tense in early January.

It is somewhat interesting that Iraq has yet to appear on shortwave. I expect that they have other priorities but I am somewhat surprised that they are not here yet. We will wait to see what happens in the future.

Well that is all for this month. Until next time, all the best in monitoring.-

BT

VHF/UHF – an expanding world *continued*

Valley also has a linked repeater on 146.825, this was not heard at all at the time. VK5ZLT came back to me on the Barossa 70 cm device for a few overs.

Eventually I was able to work these 70 cm repeaters - Barossa (737 km), Crafers (764 km), Summertown (760 km) and South Adelaide (778 km). Just about all these peaked full scale.

The most amazing part of this opening was when calls were placed on 439.000 simplex. Brian VK5UBC was running a yagi on 70 cm but is over the hills a bit (764 km), Brian peaked to 5/6 on 439.000, but was mostly a steady 5/4.

Peter VK5ZLX could only run a vertical omni antenna and 25 W and is on the eastern side of the hills (735 km), Peter was constant at 5/9+40dB here on 439.000, brilliant!

We then had a call in on 439.000 from Rob VK5JSR .... mobile!! near Eudunda (741 km), unreal stuff! and Rob peaked over 5/9 signal here.

On the evening of the 18th December, Mike VK4MIK reports. Felix VK4FUQ alerted me that something was on the "boil" on 2 m. I headed for the shack. Felix said he was hearing 146.900 VK4RGA Amys Peak, 951 km from my location. I got on frequency and called Neville VK4HNL in Hervey Bay using the Bundaberg repeater, which is on 146.800, and linked to Amys Peak. Neville come back to my call, VK4WS Wayne from Brisbane, Adam VK4KSS south of Brisbane and Ray VK3TPT/4 in Maryborough all came back. Ray, with his VK3 callsign had a couple of us skip a heartbeat until we found out he was in QLD! Felix VK4FUQ managed to get in briefly as well. I also tried into NSW repeaters near the QLD/NSW border and further into NSW to no avail.

All on the contact were "over the moon" and Neville was rapt. All co-operated to get as many in as possible. Sure made our night in Queensland.

Please remember to send through any 2 & 70 FM DX reports to Leigh VK2KRR at vk2krr@bigpond.com.

BT

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Tech XCVR

Know your second hand equipment TS-120 and TS-130	Ron Fisher VK3OM	June	40
Know your secondhand equipment FT-7 and FT-707	Ron Fisher VK3OM	September	50
Know your secondhand equipment TS-520 and TS-520S	Ron Fisher VK3OM	March	15

WIA comment

The WIA position on broadband over power line (BPL)	Peter Wait VK2DKN	October	3

HF Predictions

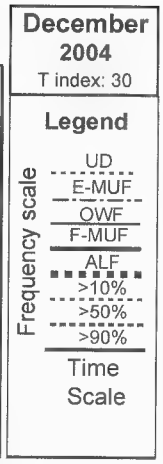
by Evan Jarman VK3ANI
34 Alandale Court Blackburn Vic 3130

December 2004
T index: 30

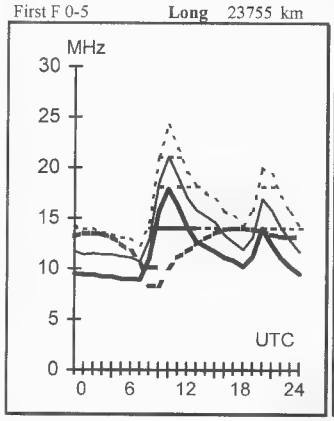
These graphs show the predicted diurnal variation of key frequencies for the nominated circuits.
These frequencies as identified in the legend are:-

- Upper Decile (F-layer)
- F-layer Maximum Usable Frequency
- E-layer Maximum Usable Frequency
- Optimum Working Frequency (F-layer)
- Absorption Limiting Frequency (D region)

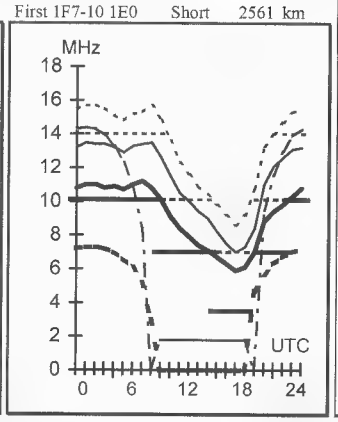
Shown hourly are the highest frequency amateur bands in ranges between these key frequencies, when usable. The path, propagation mode and Australian terminal bearing are also given for each circuit.
These predictions were made with the Ionospheric Prediction Service program: ASAPS Version 4



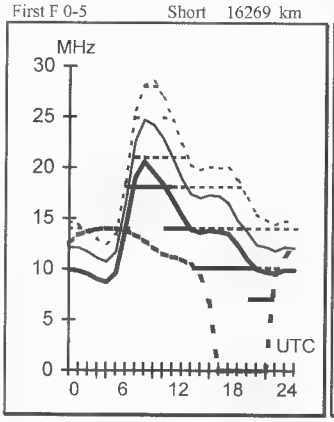
Adelaide-London 132 — First F 0-5 **Long** 23755 km



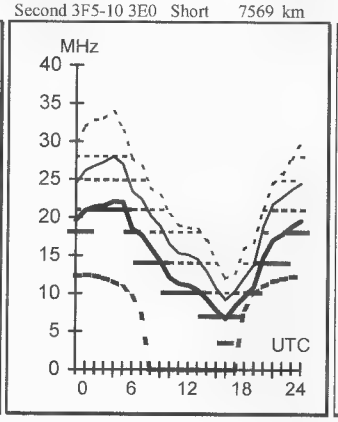
Brisbane-Dunedein 148 — First 1F7-10 1E0 Short 2561 km



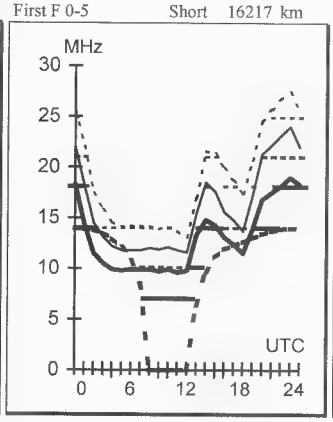
Adelaide-London 312 — First F 0-5 Short 16269 km



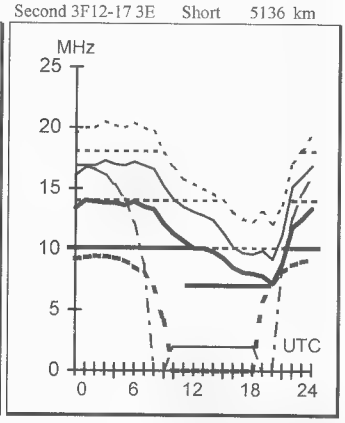
Brisbane-Honolulu 49 — Second 3F5-10 3E0 Short 7569 km



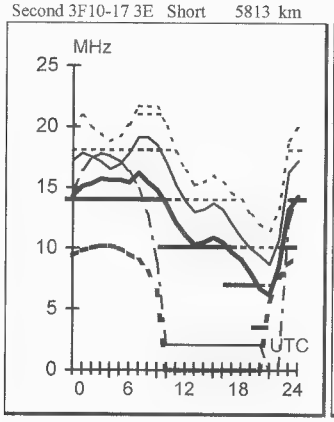
Canberra-New York 68 — First F 0-5 Short 16217 km



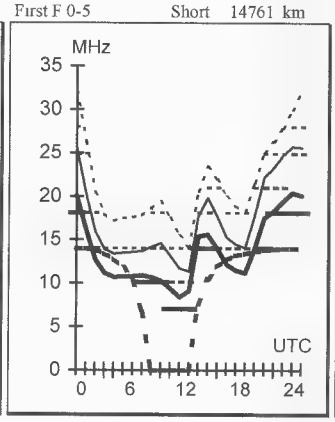
Darwin-Auckland 30 — Second 3F12-17 3E Short 5136 km



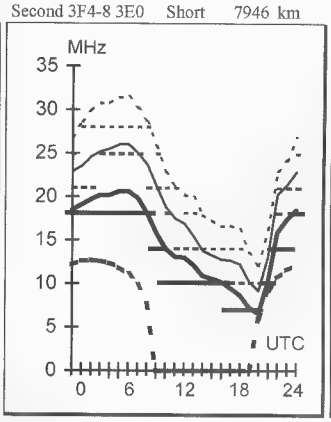
Adelaide-Manila 338 — Second 3F10-17 3E Short 5813 km



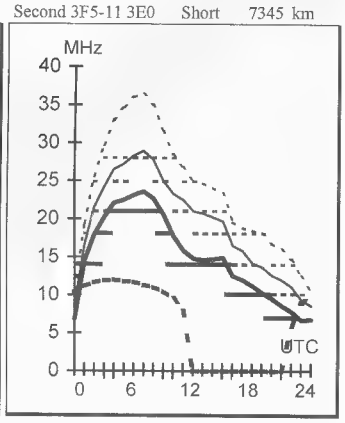
Brisbane-Miami 79 — First F 0-5 Short 14761 km



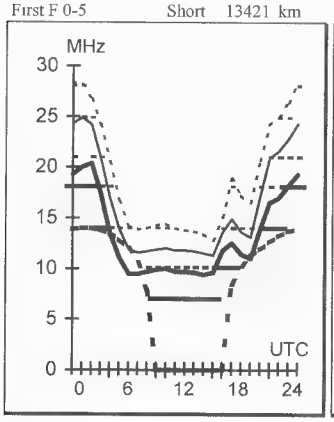
Canberra-Tokyo 352 — Second 3F4-8 3E0 Short 7946 km



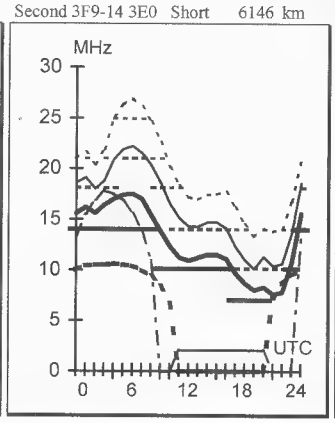
Darwin-New Delhi 309 — Second 3F5-11 3E0 Short 7345 km



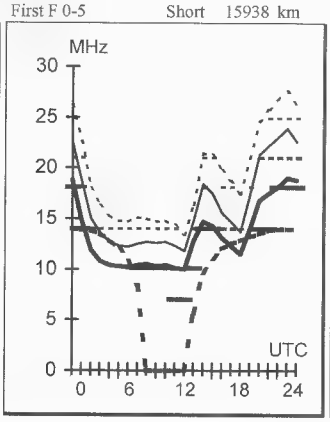
Adelaide-Vancouver 49 — First F 0-5 Short 13421 km



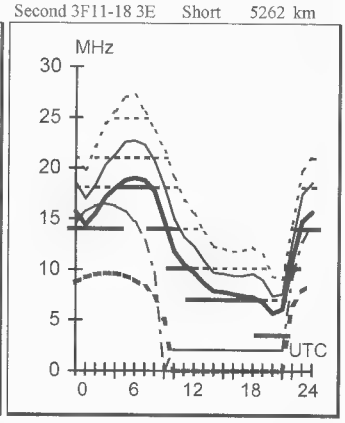
Brisbane-Singapore 293 — Second 3F9-14 3E0 Short 6146 km



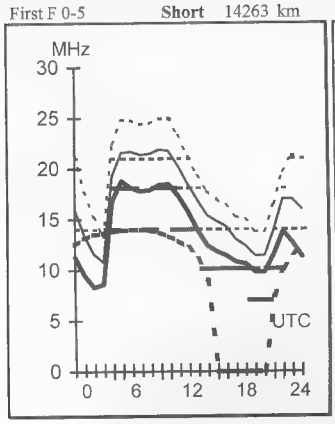
Canberra-Washington 70 — First F 0-5 Short 15938 km



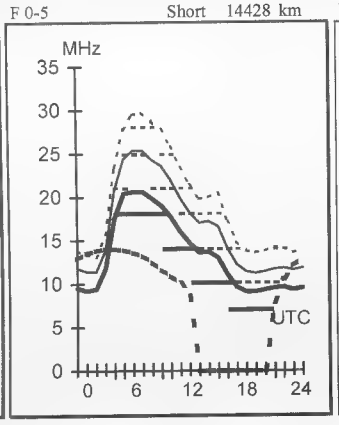
Darwin-Osaka 5 — Second 3F11-18 3E Short 5262 km



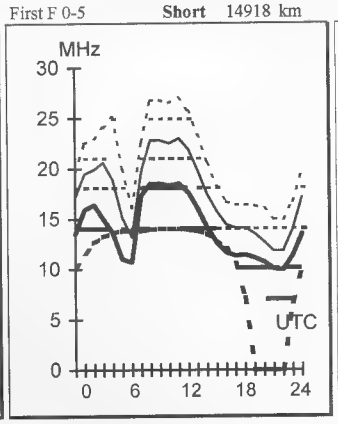
Hobart-Cairo 278
First F 0-5 **Short** 14263 km



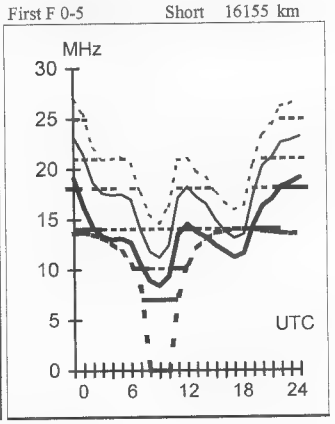
Melbourne-Moscow 316
F 0-5 Short 14428 km



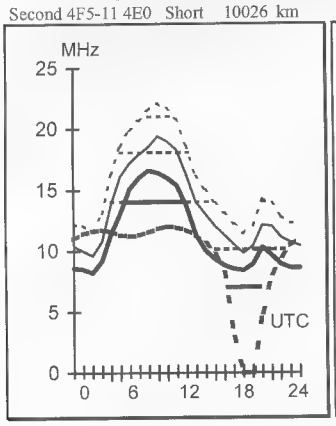
Perth-Dakar 259
First F 0-5 **Short** 14918 km



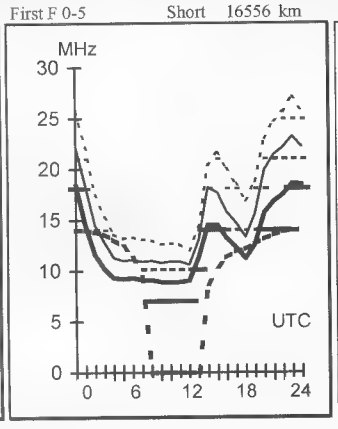
Sydney-Barbados 119
First F 0-5 Short 16155 km



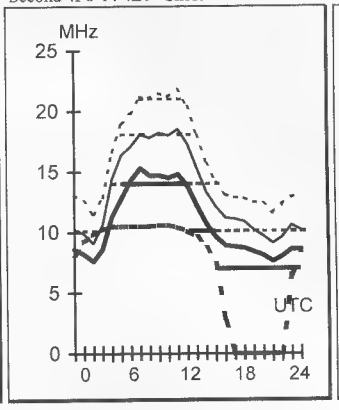
Hobart-Capetown 220
Second 4F5-11 4E0 Short 10026 km



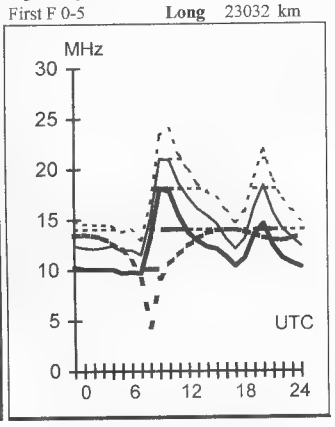
Melbourne-Ottawa 63
First F 0-5 Short 16556 km



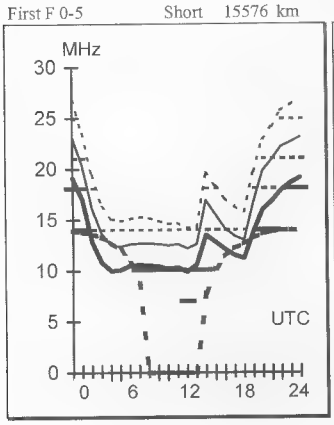
Perth-Johannesburg 248
Second 4F8-14 4E0 Short 8315 km



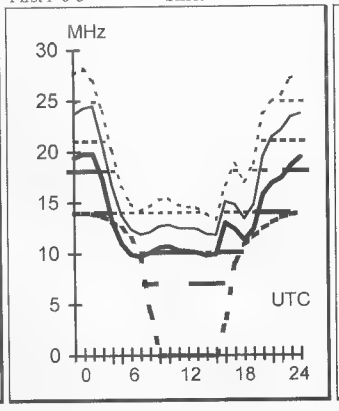
Sydney-London 139
First F 0-5 **Long** 23032 km



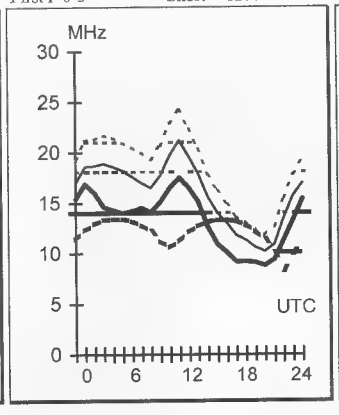
Hobart-Chicago 72
First F 0-5 Short 15576 km



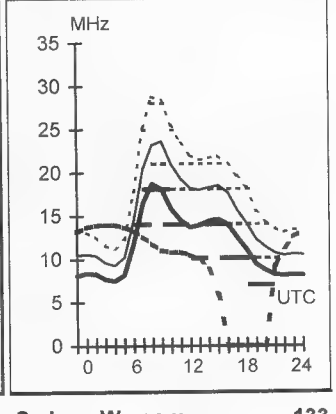
Melbourne-Seattle 50
First F 0-5 Short 13178 km



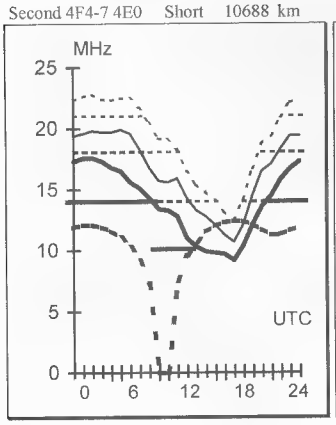
Perth-Montevideo 167
First F 0-5 Short 12536 km



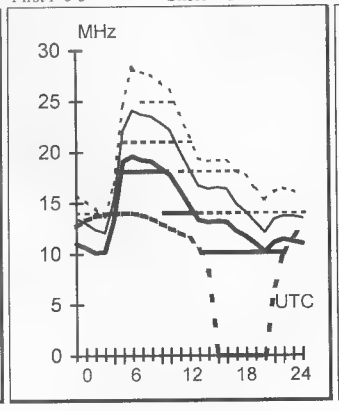
Sydney-London 319
First F 0-5 Short 16992 km



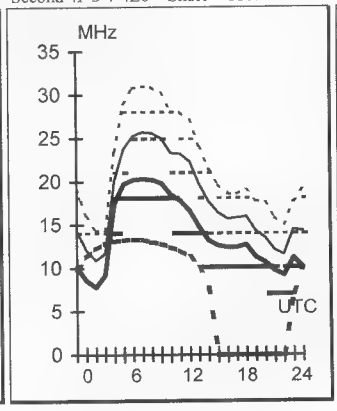
Hobart-Santiago 149
Second 4F4-7 4E0 Short 10688 km



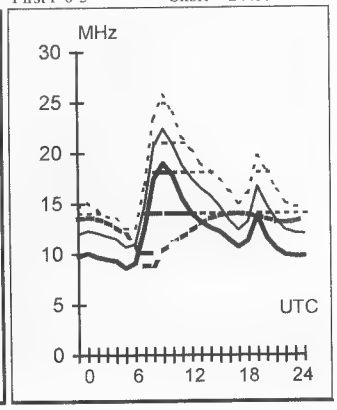
Melbourne-Sofia 296
First F 0-5 Short 15132 km



Perth-Tel Aviv 302
Second 4F 3-7 4E0 Short 11091 km



Sydney-Warsaw 133
First F 0-5 Short 24435 km



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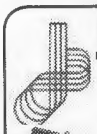

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Directory

The Amateur Service:

a radio communications service for the purpose of self training, intercommunication and technical investigation carried out by amateurs, that is, by duly authorised persons interested in radio technique with a personal aim and without any pecuniary interest. 1.56 ITU Radio Regulations.

The Wireless Institute of Australia represents the interests of all amateurs throughout Australia.

WIA membership fees are: ★ **$ 75 for full members (F grade),** ★ **$ 70 for pensioners and students (G and S grade), and** ★ **$ 50 for membership without 'Amateur Radio' (X grade).** ***Payment direct to National office.***

National Office	Contact	News Bulletin Schedule
10/229 Balaclava Road, Caulfield North VIC 3161, Australia	Phone 03 9528 5962, Fax 03 9523 8191, 10am to 4pm daily, nationaloffice@wia.org.au http://www.wia.org.au	Subject to change see www.wia.org, follow national news prompts. Contact nationalnews@wia.org.au, National VK1WIA news is distributed to all states.

Advisory Committees	Contact	News Bulletin Schedule
VK1 Australian Capital Territory VK1WX Alan Hawes VK1ZPL Phil Longworth VK1ET John Woolner VK1GH Gil Hughes	secretary@vk1.wia.ampr.org	Sundays at 11.00 am VK1WIA 7.128, 146.950,438.050 Canberra Region Amateur Radio Club Email newsletter will be sent on request to president@vk1.ampr.org
VK2 New South Wales VK2QV Chris Flak VK2XCD Chris Devery VK2BFN Adrian Clout		***Being revised***
VK3 Victoria VK3JJB John Brown VK3PC Jim Linton VK3APO Peter Mill	Phone 03 9885 9261 advisory@wiavic.org.au	VK1WIA Sunday 11.0am via HF and major VHF / UHF rptrs
VK4 Queensland VK4ERM Ewan McLeod VK4ZZ Gavin Reibelt VK4KF Ken Fuller	Phone 07 3221 9377 qac@wia.org.au ewan.mcleod@bigpond.com	VK1WIA, Sunday 9.0am via HF and major VHF/UHF rptrs
VK5 South Australia and Northern Territory VK5NB Jim McLachlan VK5APR Peter Reichelt VK5ATQ Trevor Quick	Phone 08 8294 2992 jimac@picknowl.com.au peter.reichelt@bigpond.com vk5atq@chariot.net.au	VK5WI: 1843 kHz AM, 3.550 MHz LSB, 7.095 AM, 14.175 USB, 28.470 USB, 53.100 FM, 147.000 FM Adelaide, 146.800 FM Mildura, 146.900 FM South East, 146.925 FM Central North, 438.475 FM Adelaide North, ATV Ch 35 579.250 Adelaide. (NT) 3.555 LSB, 7.065 LSB, 10.125 USB, 146.700 FM, 0900 hrs Sunday. The repeat of the broadcast occurs Monday Nights at 1930hrs on 3585kHz and 146.675 MHz FM. The broadcast is available in 'Realaudio' format from the website at www.sant.wia.org.au Broadcast Page area.
VK6 Western Australia VK6NE Neil Penfold VK6XV Roy Watkins VK6OO Bruce Hedland-Thomas	Phone 08 9351 8873 http://www.vk6.net/ advisory@vk6.net vk6ne@upnaway.com vk6xv@bigpond.net.au	VK1WIA Sunday 9.0am via WIA network
VK7 Tasmania VK7ZAX Phil Corby VK7DG Dale Barnes VK7KK Reg Emmett	Phone 03 6234 3553 phil.corby@tassie.net.au vk7dg@wia.org.au regemm@ozemail.com.au	VK1WIA Sunday 9am on VK7WI network: 3.570MHz LSB, 146.700 MHz FM (VK7RHT South), 53.825MHZ FM (VK7RAD South), 147.000MHz FM (VK7RAA North), 146.750 FM & 53.825MHz (VK7RNW North West), 146.625 MHz FM (VK7RMD North West), UHF CB Channel 15 (Hobart) and 27MHz CB - 27.225MHz LSB (Hobart). Followed at 9:30am with VK7 Regional News Broadcast also on 7.090MHz LSB & 14.130MHz USB

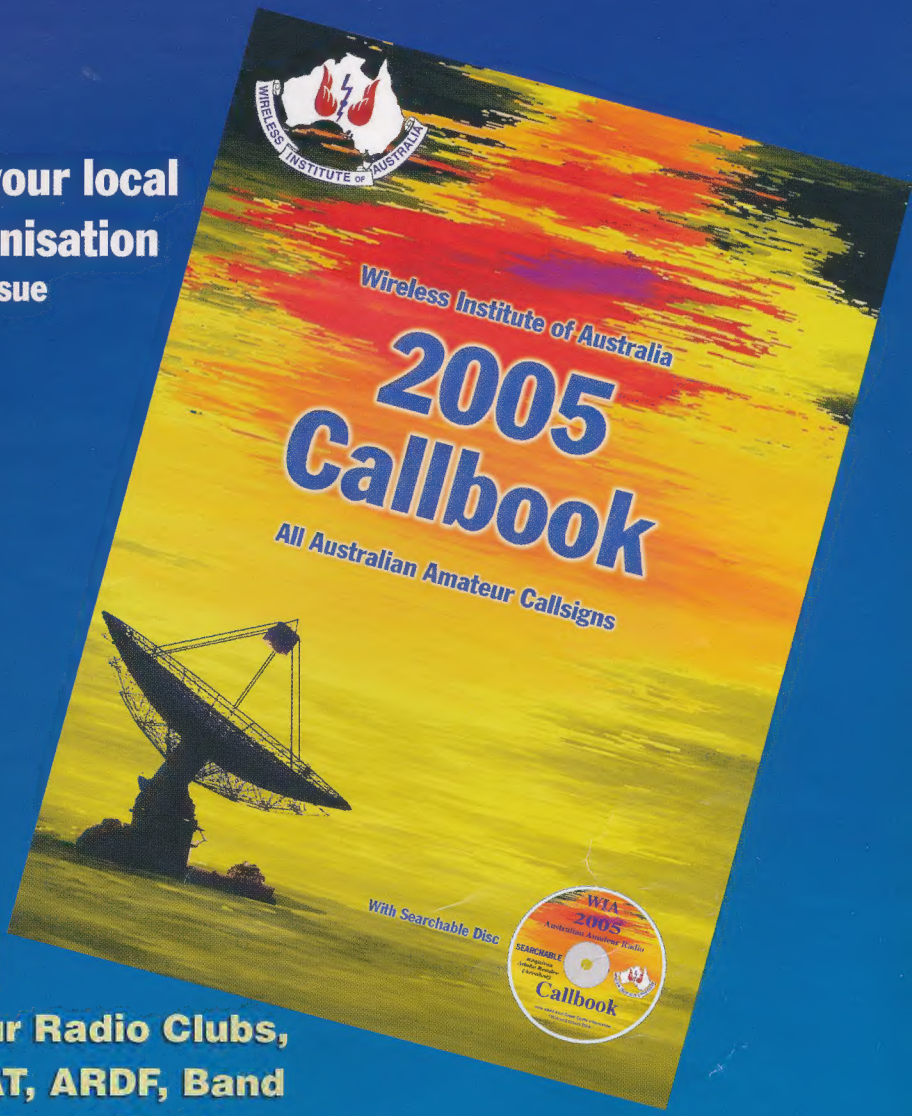
Notes

1. Only three members of the state advisory committees are listed.
2. All listings are preliminary. They will be updated each month as required.
3. Membership application forms are available from the WIA web site www.wia.org.au or the national office address above.

Now available from your local Amateur Radio Organisation
see list in November issue

2005 Callbook

All Australian Callsigns



Plus great detail about:

The new WIA, Amateur Radio Clubs, WICEN, ALARA, AMSAT, ARDF, Band Plans, Beacons, Broadcast Stations, the ACA, Examinations, QSLs, Great Circles, Maidenhead, DXCC, Packet Radio, Repeaters and more.

How to get your copy

Contact your local Amateur Radio Club, details in November AR, or Contact WIA National Office

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Prices from National Office	Pick up	Posted
WIA Member	$22	$25
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